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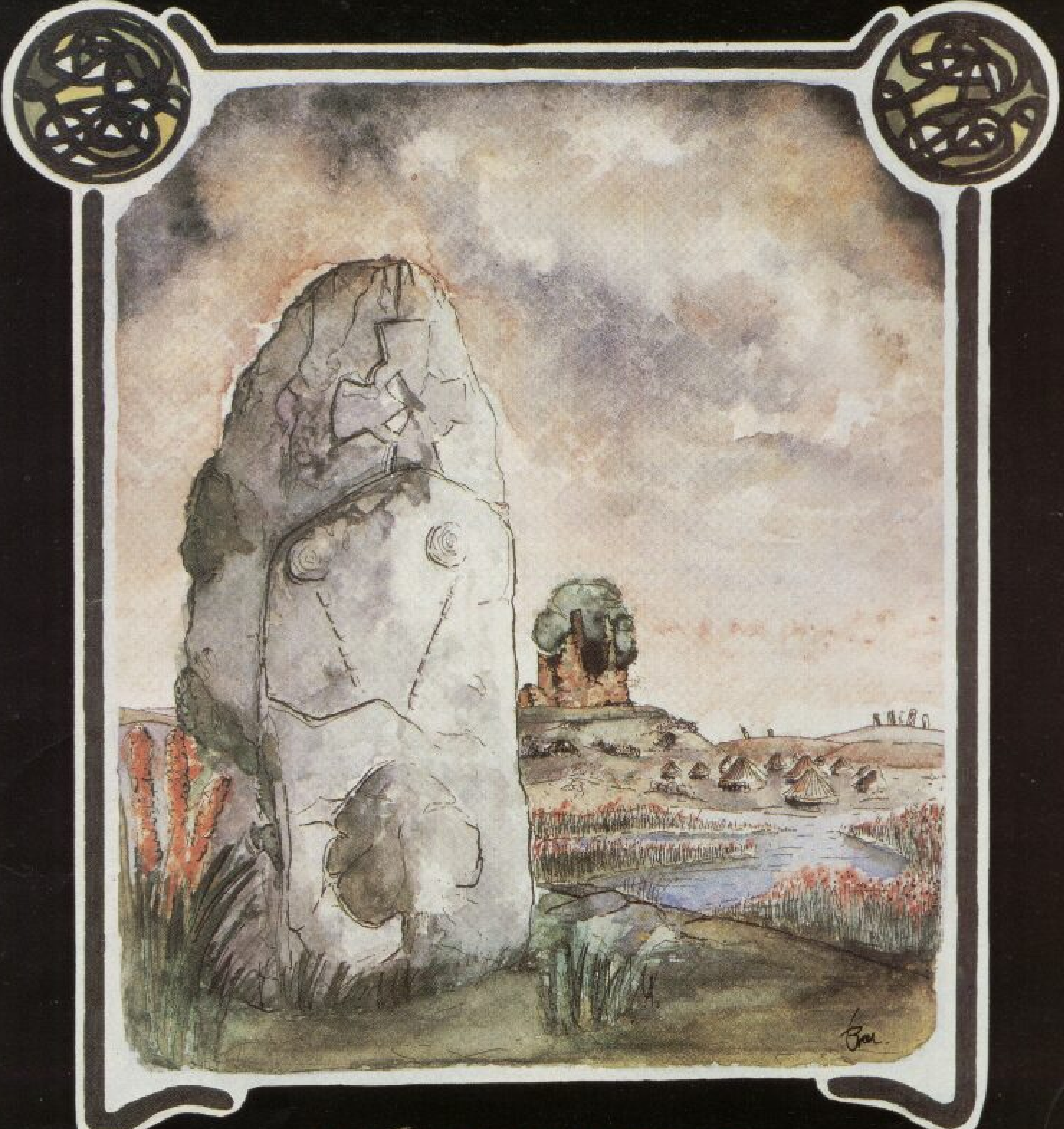
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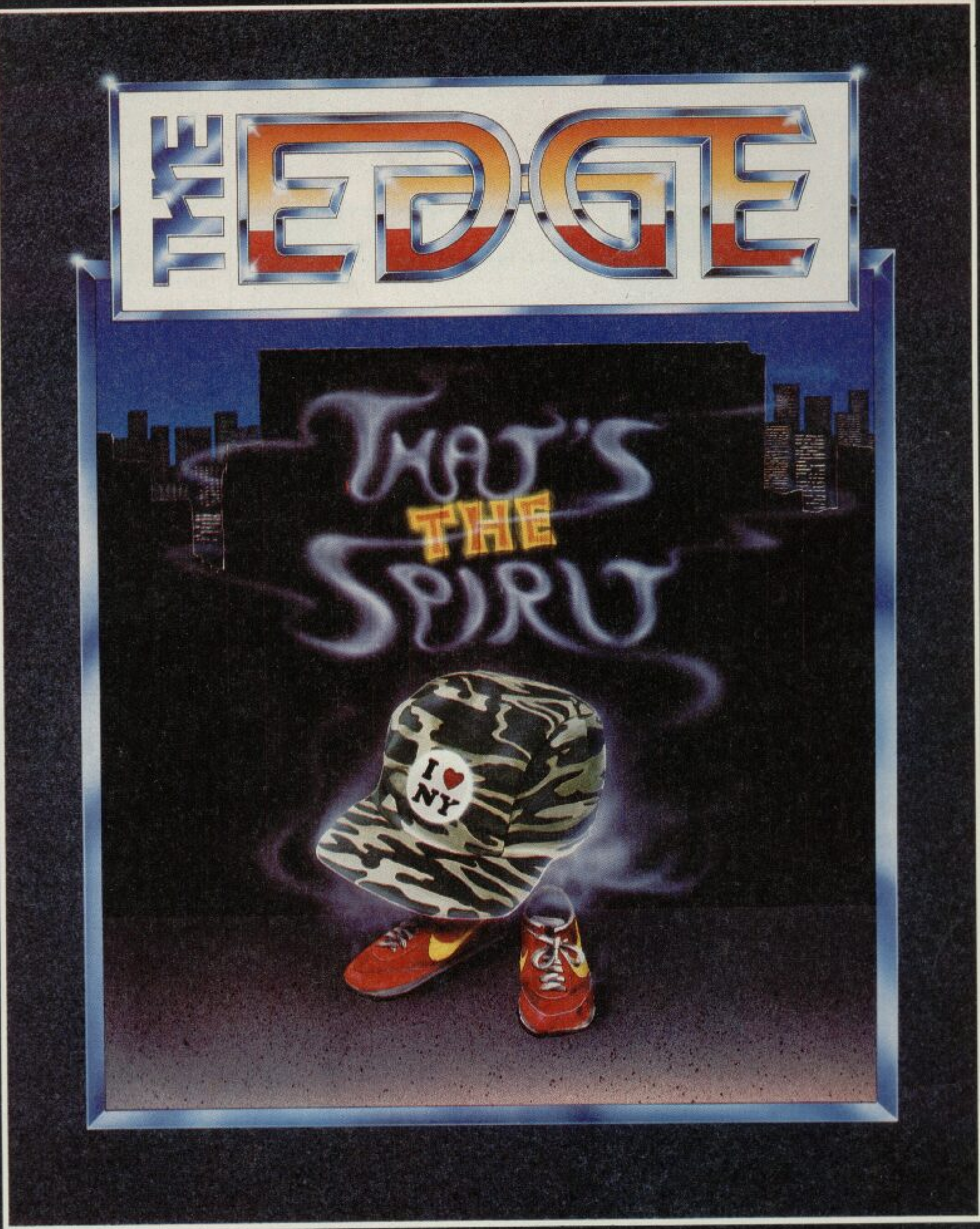
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THE EDGE
THAT'S THE SPIRIT
I ♥ NY

Has *Sir Clive* really sold out? Will you be athletic with *Charlton?* Fancy basking with a shark? Can you spot the software parrot? Are *Ocean*'s new games full of eastern promise? Is *Roger Willis* really 'armless? How many more awful puns can you find? They're all in *Frontlines*...

IF YOU REALLY WANT TO KNOW...

You've all missed your chance to dig deep for Sir Clive and help refloat the sinking Sinclair Research company. The business has been struggling since sales dropped drastically around Christmas time. However, Robert Maxwell, *The Mirror*'s generous publisher has nobly handed over a cool £12 million to help pay off the bills!

Not being one to slink into the background, Mr Moneybags has secured himself the title of Chairman of the board, while Sir Clive is relegated to the position of Life President.

The big question is, what will become of the Sinclair products we know and love? Paul Quade, a Mirror Group spokesman said, "although there are obviously new products in the pipeline, plans can not be put into action until we've settled the debts and weighed up the pros and cons of existing Sinclair goods." He also let on that Robert Maxwell feels most of Sinclair's babies are good products, and only their marketing let them down. (*Does this mean we can expect the tycoon to trade in his Roller for a C5? — Ed.*)

The Mirror Group's software arm, Mirrorsoft have not been given their orders yet. If they grow along Sinclair/Maxwell lines the least we can expect is *£££1,000,000 Spectrum Bingo*... and watch *Your Spectrum*'s credits. Could we be seeing something like **Editor** Robert Maxwell, **Deputy Editor,** Robert Maxwell...



Bob Maxwell... so impressed he bought the company.

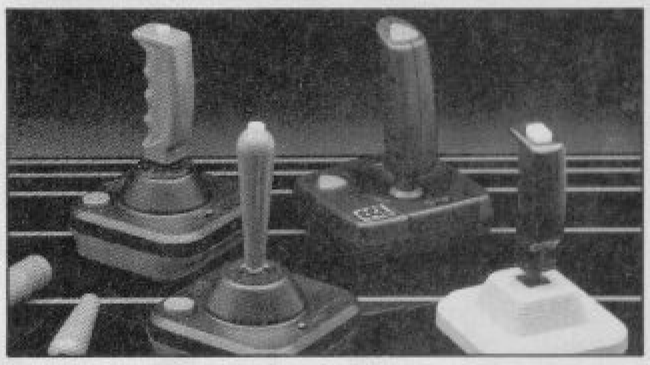


Yo ho ho — this is all rather rum. The three piratical pillagers pictured above have just plundered a Home Computer Weekly Gold Cassette Award for selling more than 100,000 copies of their swashbucklin' game *Booty*. The two jolly Rogers on the outside are really called John Cain and Kevin Moughtin. In the middle is Caroline Bunting of the Federation Against Software Theft. I wonder if she knows there's a software parrot on her shoulder.

STICK IN SET

Lurking amongst this fistful of joysticks, adaptors and cables is the latest offering from CGL. Called the *Champion,* it's there in the pic (honest!) behind the familiar Boss and Bat Handle joysticks. Its features include a contoured hand grip for those of you with contoured hands, two fast action fire buttons and a built-in auto fire control as well. And for £11.99 you'll also get interchangeable rubber feet for extra sturdiness

If you can feel your trigger finger itching, get to grips with CGL on (0628) 75171.



Highway robbery? Nah, another 'stick, up from CGL!

LOOKING INTO THE GLASS

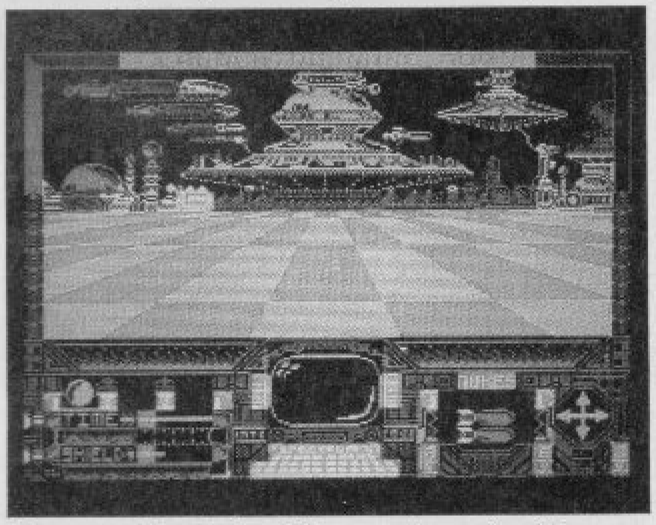
Quicksilva's out to shatter you with the impressive array of vivid colour and whizzo 3D graphics in their latest arcade-style-strike — simulator game, *Glass.*

Now, can you see yourself as a supremo Games Lord? Well this is your objective, and on your way to gathering those vital status points, you'll definitely be seeing yourself — reflected by the mirror-images on your screen.

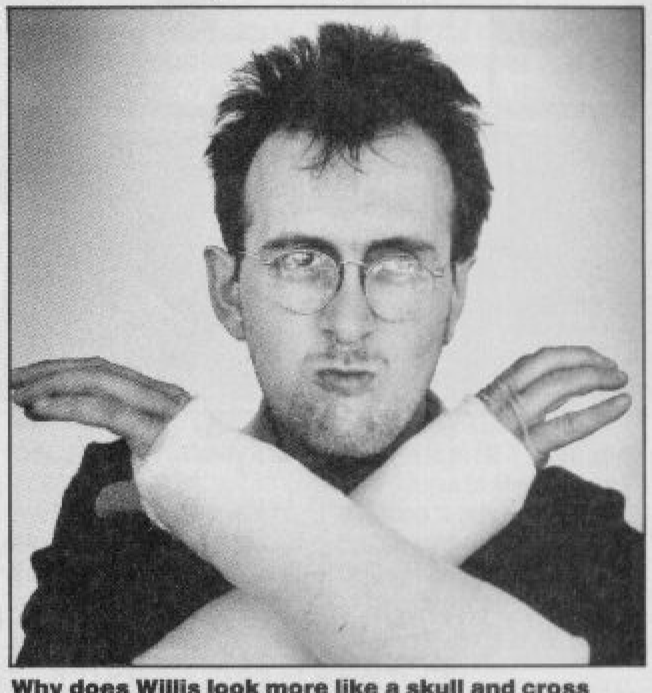
There's a real sense of gliding as you zoom through the exotic landscapes of cities and time-tunnels, waiting to fire your mega-missiles, and trying to reserve your energy supply.

Your path is by no means clear as crystal — you'll encounter up to eighty varieties of obstacles and nasties, so keep watching the scanners — your defence isn't all done with mirrors!

Glass should be on view by now, but if you want it and it's not in sight, give Quicksilva a buzz on 01-439 0666.



***Glass* — out to shatter QS's recent run of naff games?**

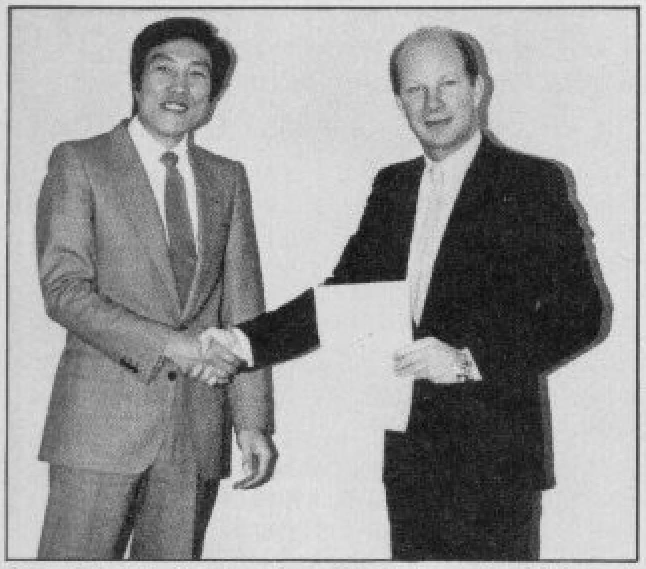


Why does Willis look more like a skull and cross bones than the usual jolly Roger?
a) He was boning up on the new games for Joystick Jury.
b) He crashed his Speccy and suffered more than a break in the program.
c) He was being over enthusiastic with his joystick.
d) None of these.
Answers on a plastercast please!

GOING JAPANESE

Komani makes mighty fine ploglams in Japan. Has some vely, vely intelesting arcade game. Ocean Software vely crever — say we bling big games to Engrand! First one *Hypersports* — you see in June, forrowed by *Konami's Tennis.*

Rater, in autumn time you see vely nice *Mike,* crassroom farce and ren *Comic Bakely* — vely funny game! You have few yen? £7.95 the plice you pay. Jeni Beattie give you detairs on 061-980 3488.



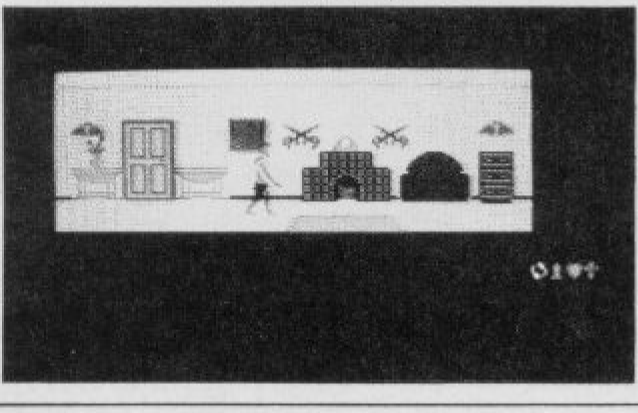
One of them's for the chop. Or perhaps the high jump in *Hypersports?*

LIFE ON THE OCEAN WAVES

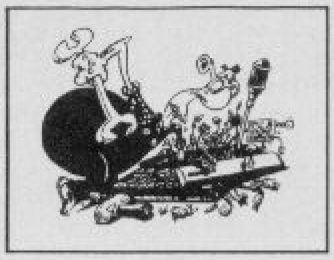
OK, you can all relax now, Frankie's about to hit your screen! Ocean has finally let the rampant Holly Johnson loose in its *Frankie Goes to Hollywood* extravaganza. You have to strike a blow for the hedonistic Frankie philosophy and conquer the mundane side of life, collecting pleasure points to become '100 per cent person'. Only then will you be welcomed to the wonders of the pleasure dome. And while you're playing you'll have the added excitement of listening to a previously unreleased, live version of *Relax* on audio cassette.

Another household hero is making a comeback soon thanks to Ocean. Yes, Daley Thompson's again being put through his paces in another host of sporting events such as cycling, ski-jump and slalom, rowing and tug-of-war. Not all Olympic sports, admittedly, but our Daley's an all-round kind of guy. *Daley Thompson's Supertest* will be leaving the starting blocks any time now.

If you're more into speed than sounds or sport, then Ocean's *Street Hawk* could be revving right up your street. If you fancy a spin on one mean machine then take a look at this motorbike game. *Frankie* and *Street Hawk* will set you back £8.95 each but you'll be able to duel with Daley for only £6.95. If you're all at sea still, give Ocean a ring on 061-832 6633.



HARD FACTS



So, you think you've got problems? Well, *Stephen Adams* is here to sort them out. Get in touch with him at Hard Facts, *Your Spectrum,* 14 Rathbone Place, London W1P 1DE.

The first couple of problems this month are both about TV's (*well it makes a change from microdrives anyway! Ed.*). First up is **Frank Thacker** who has a Hitachi TV that's incompatible with this issue 2 Speccy. Well, there are two solutions, Frank and you are not going to thank me for either of them. The first is ditch your Speccy for an issue 3 or greater as this is one of the problems the new ULA was designed to solve. The second is more likely to be the one you'll plump for but it's still going to involve forking out for a visit from the telly repairman. Your TV requires a longer 'burst gating pulse' and that can be done by doubling the timing capacitor inside. Anyone with a Grundig or Network telly will experience the same difficulty.

A Sony KV27 television is causing problems for **A Harper.** It has a video socket but every time he plugs it into the Spectrum's video out, it crashes. Sounds to me as if you need a capacitor between the two inner capacitors as the input isn't isolated in the telly. One of about 1000 microfarad should do the trick.

He's also done a bit of a silly. He wants to know what blew up when he connected his Speccy to a 12 volts supply. Well, where shall I start? The possibilities are quite mind-boggling. Apart from the 7805 regulator that you mentioned in your letter, the TR4, TR5 or any of the 16K RAM chips used for the video screen could've been damaged. Next time you'll use a regulator or bring the supply down to a more sensible +9 volts, won't you?

How do you make a Currah MicroSpeech shut up? **Kevin O'Donavan** wants to know how to disable his as it conflicts with some programs, by installing a buffer at the top of memory when he powers up. You're going to have to fit a changeover switch into the A3 connection to the MicroSpeech by breaking the track to pin 12B. The common should go to the track, normal-contact (NO) to the A3 on the edge connector and the not-normal (NC) contact to 0 volts. Now with the switch in normal, the MicroSpeech will be installed when you power up and it'll be disabled if the switch is in the NC position. One word of warning, though — if you get the switch the wrong way round you may do a fair bit of damage. But it's still the best way of making it speak only when it's spoken to!

It just goes to show that you can't rely on labels to tell you what you've got. **David Gent** and **Rob Gore** both have problems with the same printer/plotter even though one thinks he's got a Tandy and the other's positive his is a Commodore. Rob wants to know what sort of interface and software he'll need to run his on the Spectrum. Well, David's successfully using the Kempston Centronics interface so you could well give that a go. His problem is with the control codes, those below CHR$32 (the space) and the non ASCII characters with numbers above 127. Well, briefly, the control characters are usually used for controlling the mechanism of the printer while the function of the characters above 127 is to describe graphics dots to the printer. You'll find that different printers have different uses for control characters which is why you'll often get some peculiar results when you have a go at printing them. The manual's the best place to suss out how to use them and it's probably worth your while incorporating them into a sub-routine if you use them regularly — like for plotting lines and circles and so on, on this printer.

Rob Gore also has another problem which I haven't come across before. How, he asks, can he print User Defined Graphics at any position and rotate them around in a circle. Well, I reckon your best bet is to use the plotting routine in the ROM to plot UDGs onto any position on the screen, not just the PRINT positions. Now to plot them as they rotate, try calculating the position required on the circle by dividing it up into sections, one for each UDG — use the clock program in the manual, for example. Using this as the centre point for the UDG, start plotting from four dots up and four dots to the left. This should place it in the correct position. To rotate it, calculate the next position to the right or left and unplot the existing UDG and replot the new one. Best to do this on paper first. Once you've done it for all of them, they should give the appearance of rotating. The plotting routine is at HEX 22DC and you'll have to put the position required to start on the calculator stack. Still confused? Take a look at Ian Logan's book on the Spectrum ROM to clear up the finer details.

Well, that's it for another month but if you've got a problem that I haven't covered, get in touch at Hart Facts, *Your Spectrum,* 14 Rathbone Place, London W1P 1DE.

HACKING AWAY



Calling all hackers! You can contact our red hot POKEr, Andy Pennell by writing to Hacking Away, *Your Spectrum*, 14 Rathbone Place, London W1P 1DE.

Uh oh! Someone boobed — and it wasn't me, honest. D'you remember the *Monty Mole* POKEs in issue 15? You'd waited an absolute age for them and then we got them wrong. Aaargh! Well, not wrong exactly but it would've been easier to have hacked into the game than to use **Chris Wood**'s program. Somewhere along the way the REM statements got lost. All is not lost, though. Just add the following REMs to the appropriate lines and you can see what's going on:

```
200 REM INFINITE LIVES
210 REM FALL ANY HEIGHT
220 REM WALK THROUGH CRUSHERS
230 REM KILL SOME MONSTERS ON CONTACT
250 REM MOST OF REST OF MONSTERS
260 REM LAST MONSTERS AND WALK ON WATER
270 REM FINISH DATA. THIS IS VITAL
```

As you can see, it's only necessary to type in the lines that you really need unless you're gonna go for broke with the whole bunch.

So, now it's down to business. We're starting this month with an oldie-but-goodie that we've neglected up till now — *Android*. **Kyle Heath**'s written in with his formula for infinitive lives, so here goes. Load the program as usual and select the keyboard option. Press Break then enter these POKEs: 52249,24: 52250,32: 53897,0. You'll now have those illusive infinitive lives.

Now, Kyle, I hope you haven't half-inched this from another mag. I only ask because the POKE you sent in for *Jet Set Willy* was written by none other than yours truly and appeared in these illustrious pages many moons ago. We've had enough problems with lesser rags swiping our POKEs — some of their pages are starting to look like YS back issues! Well, you know what they say about imitation but ... Kyle's also sent in an account number for *Ghostbusters*: S 20203002 tang billy 15570011,W+++. Don't ask me what it does though, 'cos I've never played the game.

How d'you fancy 249 lives on *Mutant Monty*. You do? Well try **Paul Emmerson**'s POKE 54933,0. **Scott Waye**'s been pretty busy too. For infinite lives on *Cavern Fighter* do POKE 31683,0: POKE 31684,0 and for *Black Hawk* do POKE 34695,183. If you're a bit fed up with infinite lives, for *River Rescue* try POKE 36193 with the number of scientists you want to put down in one go and POKE 36225 with the number required to get the 5000 point bonus. And just to round off, Scott's added the 7th level access code for *Sky Ranger* — RECAP.

Now for the undead, **Steven Bennett** ... perhaps I'd better rephrase that! Steven Bennett's sent in a novel approach to immortality in *Zombie Zombie*. When you're asked if you want to load in the city, type CHR$ USR 4867 in response (with thanks to Terry Bulfib in issue 14). Next, type STOP to clear the ERR_SP, then edit line 2010 and remove the obvious LET boy=boy-1. You can't get more undead than that!

Back to the infinite lives POKEs with this small routine for *Giant's Revenge* and **Simon Waddington**:

```
10 CLEAR 24241: POKE 23606,115: POKE 23607,246:
LOAD ""SCREEN$:LOAD""CODE: POKE 24504,0:
RANDOMIZE USR 24450
```

Position the tape just after the second loader, immediately before the SCREEN$, and then RUN the above program. That'll nobble any thoughts of revenge on the giant's part.

Now, prepare to enter the *Hall of Things* (*sounds a bit like a trip to Castle Rathbone! Ed*). The game has one of those mean looking loaders so **Bruce Phipps** has come up with the following few lines: Run this and play the tape from the start. The picture will loads as usual and don't worry that the border's not how you remember it. When it's done, do POKE 32717,0 for no wounds, which is really limitless lives, or you can POKE 35923 with the starting amount of magic. Now use RAND USR 24576 to start the game.

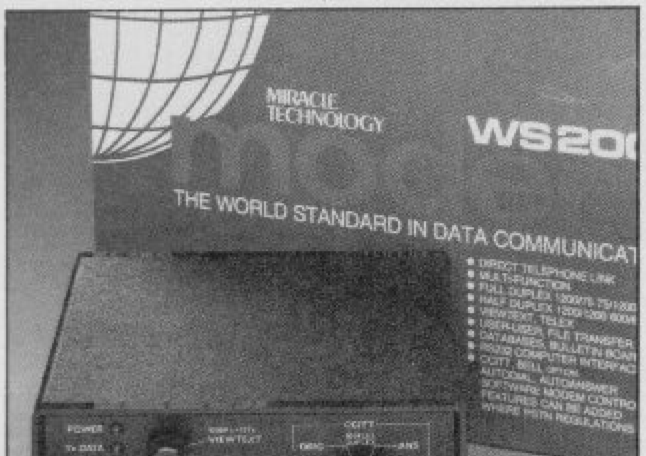
Ya wanna maka da money at Mugsy, eh? A couple 'a real dirty rats, **Robert Wooley** and **Stephen Hill** wrote in with a piece of code. When you're asked from many customers you want to but, enter the number 5658986 and you'll be given 5 million and over $10 million. It's a little temperamental, so if it doesn't work try it the next year. Can you refuse their offer?

Finally, **Phil Dale** needs help — no funny comments please! Can anyone come up with a POKE that'll remove the bull from the Spanish sequence of *Travels with Trashman*. C'mon and take the bull by the horns.

BASKING IN GLORY

If ever you need to track down a basking shark in a hurry, then this modem from Miracle Technology will do the trick. Well, that's what it was used for in the Wildtrack telly program — and it's worked a few wonders for others as well. Operation Raleigh is using them to send data back to headquarters, for example. And even if your needs are a trifle more mundane — no sharks in Sidcup, eh? — it may still be worth your while taking a look at the multi-speed, multi-standard WS2000.

And the reason Miracle is shouting about it? Well, it's just become the first modem ever to be chosen as one of the four finalists for the British Micro Computing Awards 1985 Peripheral of the Year. If you're impressed and you've got £154.73 (including VAT and delivery) then you can order one direct from Miracle. They can be tracked down by ringing (0473) 50304.



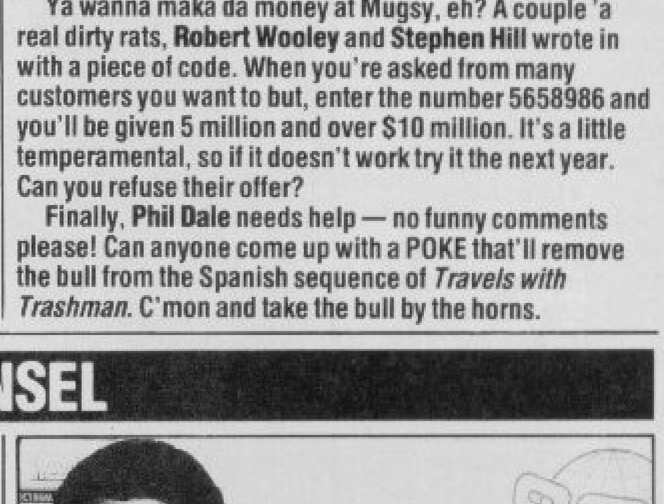
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STYLE COUNSEL

If you're a dab hand at graphics, try creating them with style, or rather, real *Style*, the latest cassette and interface package from Saga.

So, what's the tale behind Saga's *Style*? They claim you'll be designing and creating your graphics much more quickly and easily than ever before. And it's versatile, so you'll find that the interface doubles as a fully Kempston compatible joystick interface.

Saga reckons that *Style* can successfully be used for educational, business or artistic programs, so if your programs need updating, think *Style*. Best of all, you won't have to fork out a designer price — £29.95 secures. Saga will tell you the full story on (04862) 22977.



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Winning At The Races Using Your Computer by Paul Worden
Interface Publications | /£6.95

They're under starter's orders — and they're off! Yes, the race from bookshop to bookies is on. Now, hundreds of hopeful punters will be using their Speccies in a bid to increase the odds in their favour at the races. Of course, the question the big money's asking, is can it be done, and more immediately, does this book show you how?

First though for a confession. I've had a crack at solving the problem this book tackles but without much success. Look at me — reduced to making a bob or two writing for *YS*. (*Hmm, you're even taking a gamble with that! Ed*). Well, as an experienced punter himself, the author's 'currently profitable' system sounds like a good enough bet. The trouble is that the details of the wonder system don't actually appear in the book. Instead, you get an outline of the various approaches to the problem but you're still left with the much trickier task of solving it yourself.

So, what have you got to take into account before placing your bets? The author reckons that by considering such variables as the horse's weight, what it had for breakfast, its usual performance and so on, you'll have a better chance of picking the winner — and if not every time, then at least often enough to make a profit. Nothing new in this, you might say. Neither are his traditional points system nor his speed rating method world-shattering revelations.

Each system is clearly explained, which should prove useful to programmers new to horse racing but regular punters are going to be disappointed that no definitive system is recommended.

You're presented with an example program for each of the different systems described and there's also a helpful section on how to input and display data. And the bit I found especially useful was the simulation program that lets you compare the results of past races. I just wish the process for modifying unprofitable methods was described in more detail.

If you're going for a gamble on the gee-gees then this book gives an enjoyable intro to racing systems, but I can't see experienced race-goers finding much help in the programming hints. Paul Worden's system may well be ahead of the field but he's careful not to give too many secrets away, that's for sure. A true mark of confidence and a sure-fire way to shift copies would have been if he'd taped a tenner to the inside cover — I fancy a flutter and I'm willing to try anybody's system if they come up with the cash. Never one to look a gift horse in the mouth, as they say!

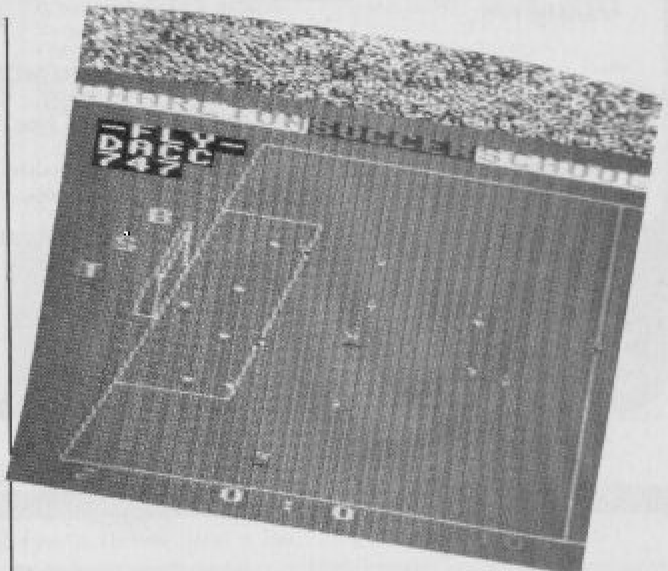
Paul Woof

LIVING LEGENDS

The second part of the *Komplex* trilogy, called *Komplex City*, is shortly to be released by Legend. This part's based on the same 'grab the sequence of letters and escape the baddies philosophy as its predecessor, but it's rather niftier on the screen. You'll also come up against an even larger variety of baddies and obstacles to avoid — or encounter at your peril. If you're in the mood for a headlong 3D dive into an endless alien cavern *(the usual address — 14 Rathbone Place ... Ed)*, all you'll need is £9.95.

Legend has also come up with an idea for recompensing all those of you who weren't exactly enamoured by *The Great Space Race*. All you have to do, is rip-off (you'll have had some experience of that) the *TGSR* poster from your wall and send it with a fiver to Legend, P.O. Box 435, London E4 7LX. In return they'll send you a copy of *Komplex*.

BOBBY SOC'S IT!



How d'you rate your chances as a football manager? There's a lot more to it than shooting from the sixty yard line — and the penalties of losing are much more serious. If you want to find out how you'd score, have a go at *Bobby Charlton's Soccer* by Dacc Ltd.

This claims to be so much of a soccer simulation that you'll probably find you've got muddy knees when you leave the pitch...er, I mean switch off your Speccy! Not only do you have to be a real pro at goal-getting, dribbling and taking kick-offs but you'll also have to shape up your team — moulding their skill, stamina and accuracy till they come up with that cup-winning formula.



He's football crazy, he's football mad.

You also get to hear his master's voice on the cassette plus all the other footie sound effects — well, not quite all, let's hope.

If you have the talent, you'll also have the chance of taking part in league tables and compos. The game'll cost you £11.95 but there's more than a season's worth of play in it.

Of course, the definitive footie game has yet to be written. Forget about becoming an ace footballer, or a magic manager, how do you join the two Jimmies, Hill and Greaves for their non-stop telly talk-in? Now if you want to suggest that idea to Dacc, you can talk them into it on 061-437 0539.

PRETTY POLYPRINT

If you feel that it's time your printer spoke a few languages, then the Polyprint multilingual interface could be the answer. This device speaks seven languages (including the major Eurospeaks and Tasword!), and enables the user to print what he sees without doing a parrot fashion COPY in graphics mode.

The character generators are in EPROM and a new EPROM with a different selection can easily be programmed using PROMER-SP or BLOPROM-SP. Specialised character sets, such as Maths, can also be added to the EPROM and a hard copy obtained by a screen dump.

Otherwise, a character font can be downloaded into the printer to match the screen. Machine code programmers could in fact dump such utilities into the Spectrum's RAM.

If you want to be in on the lingo, you can parler avec Cambridge Microelectronics on (0223) 314814.



The interface that speaks seven languages — say no more.

FROM THE HIP



You'll be pleased to know that I've come to a decision. (*You're leaving us? Emigrating? Getting out of your comfy chair to make me a coffee? Ed.*). I read that — keep out of my column! I've decided that the June issue is the last one we're gonna print for at least another year. It's caused me nothing but problems on the Helpline.

Anyway, here's a quick rundown on the major hassles. First up, it's Program Power. It seems our printer's got bored with printing hash signs (#) as £s, and to liven things up a little it's taken to turning them out as weird backward curves. Mmmm, we'll have to get it seen to pretty quick. A lot of you have had problems getting hold of Softek's *Artist* that was reviewed in the issue. Well, it should've hit the streets by now so all you budding designers can start shelling out your £12.95 — or should that be #12.95. Either way it's well worth the cash (or hash).

A number of you couldn't get your heads round the headerless files thingy in From The Hip in the June issues. **Mark McPherson** phoned in from Edinburgh to ask for a simple hex dump of the listing so he could type it into his hex loader. Well, for all you decapitated file-men out there, here it is.

```
3E FF
11 00 1B
DD 21 00 40
CD C2 04
C9
```

If it's the loader you're after, then you only need to change the CALL address and add 37h to the start of the listing for the SCF instruction. Phew, may I never see another June issue! (*Zat can be arranged. Ed*).

Now onto some calls on new topics. **Trevor Garth** from Huddersfield called for some useful POKEs — and just for a change they weren't the ones for Jet Set Willy. He'd heard about a POKE that'd put the editing line at the top of the screen. How about POKE 23738,83? That should do the trick. So how's it work? Well, it mucks about (*is that a technical term? Ed*) with the streams and channels and inserts the ASCII code for 'S' where the 'K' is normally.

Time for a re-write now. **Rick Cary** from Llan ... well, Wales anyway, wants to know how he can re-define the complete Spectrum character set just like they do it on commercial games. At last, one I can suss out on my tod but be warned it requires a fair bit of patience. You've got to sit down and design the character set and then type the whole lot in.

Definition's done in exactly the same way as with UDGs with one bit representing one pixel of the character. Time passes. Once you've done your 96-odd characters, that's from Space to Copyright (ASCII 32 to 127), clear enough room for them to sit in memory and then you simply need to POKE two address with the address, less 256 bytes, of where you've stuck your data. The low-byte POKE address is 23606 and the high-byte address is 23607. Got that? Well, let's say that you've stuck your routine at 50175 — and you've stuck your routine at 50175 — and you've remembered to clear up to 50157 haven't you? — you'd need to POKE 23606,0 and POKE 23607,196. Now your Speccy'll look up there for its characters rather than in its ROM.

Catch you on the phones.

Troubleshootin' Pete

THE PLOT THICKENS

We're free! Finally, you took pity on our plight and solved the mystery of Castle Rathbone to help us escape from the treachery of the evil robber baron. What are we going on about? Well, cast your minds back to the compo in the May issue when we asked you to uncover the secret message hidden deep within the castle and to draw us a map of the adventure to help us escape. The full story of that brilliant and daring exploit is recounted in full in *The Adventure of Castle Rathbone* in this issue.

But now comes the time for your well-deserved rewards! Who has won the 250 smackers that Print'n'Plotter so generously offered as the first prize? Well, our congratulations go to **Ian D Flory** of Banff — you can start plotting how you're gonna spend all that lovely lolly, Ian.

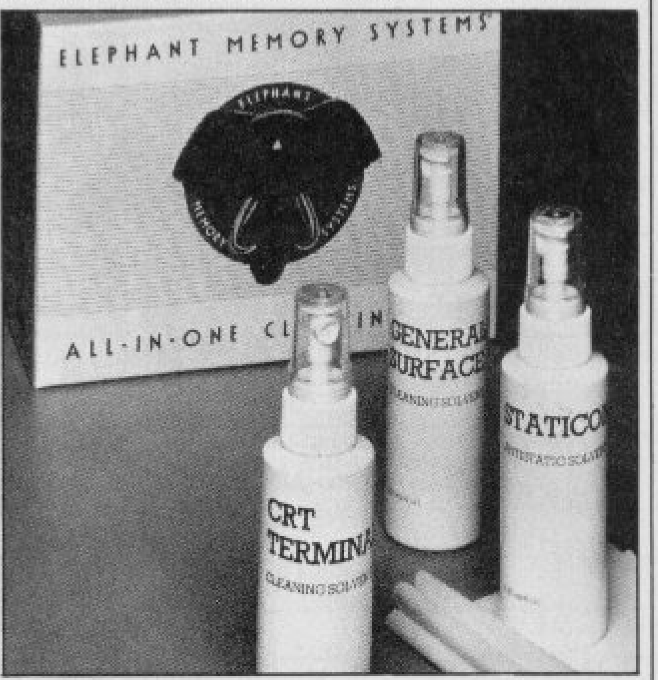
Also, there's a Print'n'Plotter Adventure Planner for each of the following hundred heroes who also cracked the code. They'll come in very useful for solving this month's mega adventure. Well done the lot of you!

RUNNERS-UP

R Debarr, Ashford; Harry Maton, London SE20; Malcolm Hawe, Huddersfield, Trobjorn Casperen, Norway; Roger Clotworthy, Crewkerne; Leigh Evans, Leighton Buzzard; MW Wabe, Edinburgh; Mike Baker, St Helens; Richard Smith, Angus; R Manley, Bromborough; Jonathon Riley, Littlebourne; J M Holliday, Shoeburyness; M Millman, Plymouth; A J Markham, Gt. Yarmouth; M Graham Scott, Bury St. Edmonds; Dan E Runerfeldt, Sweden; Annie Gloster, Worksop; Neil Bailey, Long Eaton; G R Silver, Chichester; Michael Talianos, Epsom; Antonio J Moreira, Portugal; P D Wolfe, Hayward's Heath; R Sedgwick, Royston; Carlo Ruberto, Sweden; B Haskey, Rayleigh; Thomas S Dunlop, Washinton DC; Hugh McGregor, Pitlochry; C A J Green, Wilton; K W McChesney, Renfrey; Kantor L E Abrahamson, Sweden; Kevin Kendall, St. Austell; Angus G Rae, Argyll; M A Richards, Roche; Paul Carson, Godstone, T Fisher, Horley; Tom R Conway, Fife; S Lucas, Firth Mossbank; Zoe Bassett, Chelmsford, P E Tuffin, Huntingdon, Chi-Wah Yau, London NW1; A Simmons, Lower Sunbury; D Rawling, Leeds 9; David L H Collins, Fronton-on-Sea; Alexandre Romeiras, Portugal; W Mikulin, London W11; Steve Jones, Sutton Colefield; Kevin Kenning, Goole; S Megson, Guisborough; Adam Hems, Headly, William P Fleming, Cleator Moor; Martin Dolphin, Preston; Nicholas Winterhalder, Fareham; David Woodruff, Looseleigh; G Thander, Hull; P Marchant, Rothwell, Richard K Turner, Barnsley; S G Mitchell, Basingstoke; D Haskey, Rayleigh; K Williams, Halifax; P Church, Didcot; Bill Price, Bury; S G Dee, Tile Cross; Robert Cadman, Wolverhampton; Alexander L Ingles, Carlisle; David W Hill, Weymouth; J R Penley Martin, Diss; P V Harrison, Stratford; R A Houlton, St. Helens; Fergal McCauley, Londonderry; M F Reynolds, Ross-on-Wye; D J Whicker, Sedburgh, Alan Connolly, Glasgow; G F Pridie, Plymouth; Robert Prince, London SE17; D G Chandler, Emley; Andrew Sims, Belvedere; Tony Breski, Swindon; A L Hodson, Rosherville; Forbes McRay, Perth; Vernon A Thomas, Nr Bridgend; Arthur Izod, Crawley; Jeremy I Johnson, Upton; J Whittle, Helensburgh; Amanda Holyoak, Woking; S Twigg, Macclesfield; Brian Morrison, Co. Down; Andrew J Clarke, Longley Park; Andrew Hooper, Bruton; A Stuart, Robertsbridge; B L Ham, Luxembourg; G Porter, Stockport; P Spooner, Radcliffe; A S Grainger, Milford-on-Sea; Andrew Turnball, Rugby; Mick Line, Grimsby; David Christie, Coventry; Markos Massouras, Greece; G Bloor, St John's; I R Oldcorn, Ascot; A J Acey, Sheffield.

SQUEAKY CLEAN SPECCY

Housework's a real pain, but when it comes to keeping your Speccy spic'n'span, a quick lick with the duster just ain't gonna do the trick.



Join the Grimebusters!

So, if you're out to spruce up your Speccy for the summer, Dennison Manufacturing Company Ltd has come clean with the easy answer — the CK1 kit.

The small package contains both a screen cleaning and a general surface cleaning solution, as well as an anti-static liquid and fifty lint-free cloths. That lot should not only give you a spotless Spectrum but it also makes good preventative maintenance sense too. If you don't reckon you're being taken to the cleaners, the package is yours for £19.95 from high street dealers.

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YOUR SPECTRUM GO FOR GOLD

Want to be a gold medallist? If your a great games ace *YS* is asking you to Go For Gold and be a champ!

Here we have it — the first line-up of the hottest-high-score hopefuls who fancy their chances in the *YS* search for the greatest of games-players!

We asked you to ply us with your high figure scores, and you did just that, so we sifted through the entries, picked the best of the bunch and framed those eager competitors faces for all to see! Remember, all you would be winners — play the game and keep your hyped and hacked scores to yourselves, you'll only be outplayed at the finals.

So come on all you gamesters out there — don't hide your skill! Take the plunge, and go for a place in the *YS Chart Challenge*. You could find yourself in the running for a gold medal in the final play-off at the end of the year — so don't wait, fill in the coupon now and you'll be on your way to winning!

Also, our congratulations go out to **M. Hernandez** of Whyteleafe, Surrey for being picked out of the Ed's hat! Look out for your three pieces of software — they'll be coming soon!

YS GO FOR GOLD

My top 5 all-time greats are:

1 ....
2 ....
3 ....
4 ....
5 ....

My top scores are*:

1 ....
2 ....
3 ....
4 ....
5 ....

The next games I'm gonna rush out and buy are:

1 ....
2 ....
3 ....
4 ....
5 ....

*You don't have to fill it all in but make sure you specify the level of difficulty for your scores.

If you're going for gold, stick your mugshot here

Make sure you send us a black and white photo of yourself if you've filled in your high scores.

I'm going for gold! My name is:

....

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....

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Independent Witness

Name ....

Address ....

....

.... **Postcode** ....

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ALL · TIME · TOP · TEN

Colin Maclean 99% | George Forsyth 95% | Paul Hosken 89%

1 ATIC ATAC
ULTIMATE
8

2 MATCH DAY
OCEAN
6

Richard Tobias 13-0 (5 min game) | Ian Golden 12-0 (5 min game) | Andrew Stark 8-1 (5 min game)

Skul Audunsson 79 items | Jason Davis 76 items | Susie Matthews 75 items

3 JET SET WILLY
SOFTWARE PROJECTS
4

4 KNIGHTLORE
ULTIMATE
7

Richard Tobias 70% | Tony Samuels 55% | Pete Shaw 50%

Graham Conner 186555 | Richard Tobias 112350 | Jason Davis 92500

5 SPY HUNTER
BALLY/MIDWAY
NEW ENTRY

6 STARION
MELBOURNE HOUSE
NEW ENTRY

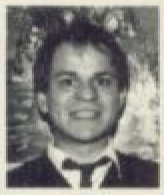
George Forsyth 12721 | Stuart Haire 128 | Alison Hjul 112

Valentin Kressler 875, 625 | Wendy Smith 604, 324 | Stuart Haire 495, 591

7 DALEY THOMPSON'S DECATHLON
OCEAN
3

8 ALIEN 8
ULTIMATE
2

Valentin Kressler 16 Chambers | Claudia Jeffries 38% | Jerry Lewis 30%

Richard Tobias 34,000 | Alan Towler 23,000 | Max Phillips 17,000

9 GHOSTBUSTERS
ACTIVISION
9

10 MONTY MOLE
GREMLIN GRAPHICS
NEW ENTRY

Teresa Maughan Level 18 | Dave Baskerville Level 15 | Roger McMunford Level 12

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3. **TAPPER** — SEGA
4. **HERBERT'S DUMMY RUN** — MIKRO GEN
5. **CAULDRON/THE EVIL DEAD** — PALACE
6. **FALCON PATROL II** — VIRGIN
7. **JET SET WILLY II** — SOFTWARE PROJECTS
8. **GLASS** — QUICKSILVA
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GRAND PRIX COMPETITION

The race is on! Will you be first to take the chequered flag in this month's megacompo from Kempston Micro Electronics. It's guaranteed to drive you round the bend!



1. What was the name of the fastest jet-engined car in the world and who drove it?

2. Who built the car with the largest engine in the world, and what was the car called.

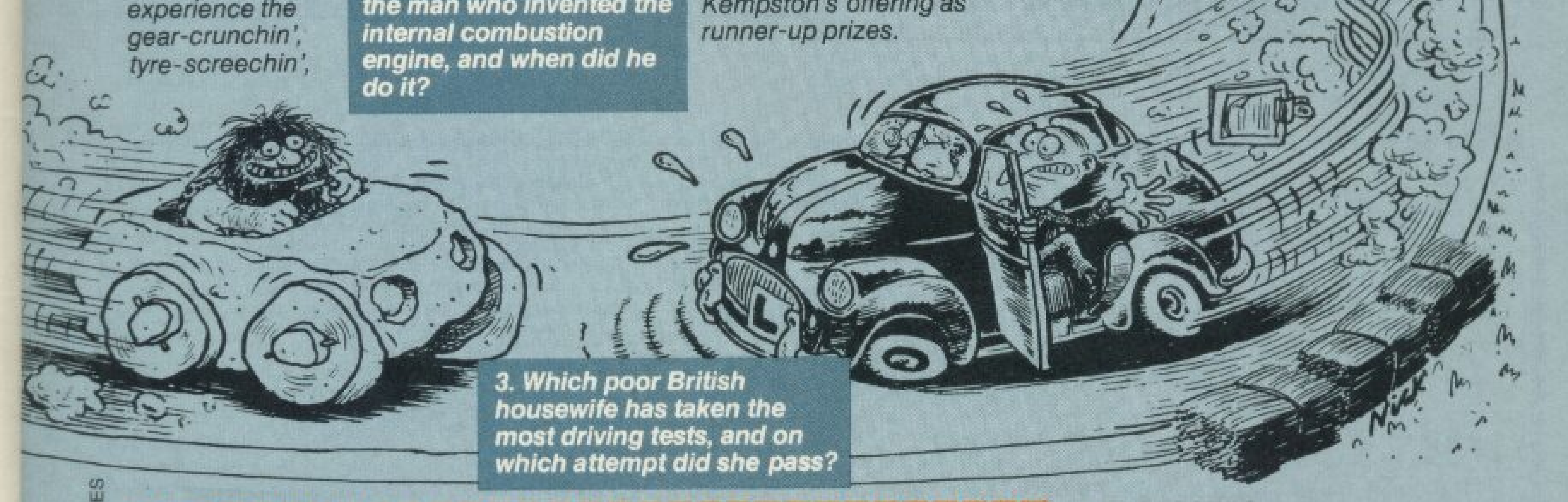


Vroooooooooom! Acceleration and exhileration can both be yours if you're one of two first prize winners in this month's compo. It's inspired by Kempston Micro Electronics' new game called Chicane, a classic racing car simulation. In this game you play the part of a Formula 1 racing ace, changing to the best possible gear for the conditions, taking the corners at speed without running off the track and coping with the difficulties of the chicane. If you win the compo you'll experience the gear-crunchin', tyre-screechin', corner-takin' thrills 'n' spills of the race track all for real. The first prize is two pairs of tickets for the European Grand Prix at Brands Hatch on 22nd September. This is definitely not a race to miss.

Even for those of you unlucky enough to have to sit this one out in the pits, there's still the chance to motor off with one of the five Formula II joysticks and interfaces that Kempston's offering as runner-up prizes.

4. Who was the fastest person to drive round the world and how long did he take?

5. What was the name of the man who invented the internal combustion engine, and when did he do it?



3. Which poor British housewife has taken the most driving tests, and on which attempt did she pass?

NICK DAVIES

KEMPSTON CHICANE COMPO

Phah, you thought you could fool me with your souped-up questions. No trouble. And now I'm putting my foot down — I want the prize of two tickets to Brands Hatch. Just for the records, here are the answers to the questions!

1. Name of car .... *driven by* ....

2. Name of car .... *built by* ....

3. It was .... *on her* .... *attempt*

4. It was .... *who did it in* ....

5. It was .... *in* ....

Name ....

Address ....

....

.... *Postcode* ....

Now speed this on its way to us by putting it in the post addressed to Kempston Chicane Compo, Your Spectrum, 14 Rathbone Place, London W1P 1DE.

LAP RECORDS

To enter this really racy compo, just drive your way round the track on this page and answer the five questions about motoring record-breakers. When you've come up with the correct answers, simply fill in the coupon and post if off to Kempston Chicane Compo, Your Spectrum, 14 Rathbone Place, London W1P 1DE. If you're having problems coming up with the right answers they're all in black'n'white but you've got to be stout about it (call that a clue?! Ed)

KEMPSTON RULES OK

Entries for the Kempston Chicane Compo must be postdated no later than August 31st 1985.

Each entry form must have the answers filled in on the coupon.

The Editor's decision is final and no correspondence will be entered into regarding this competition.

MAGAZINE HEALTH WARNING If you want the formula for keeping your copy on the road, use a photocopy!

FORUM

It's the YS scribblers' spot — and there's a bundle of free software for the sender of this month's Star Letter. Write to Forum, Your Spectrum, 14 Rathbone Place, London W1P 1DE.

HA HA, VERY FINNY!

Nobody seems to have discovered yet that if you LOAD Firebird's *Booty* with the Currah MicroSpeech plugged in, you get an entirely different game?

The game LOADs as normal, but once you press the key to start playing, something odd happens. For starters, your cabin-boy doesn't appear when the first cabin is displayed and neither do the pirates! Then the new game begins ...

It involves swimming in the sea in a wet suit (readily available in days of old, of course!), collecting small fish and avoiding the larger species of flickering marine life. All the time your air supply is running down to zilch. During this under-sea escapade, sailing ships like the ones on the LOADing screen float past.

When your air's run out and you've suffocated, just resurface between ships and stock up with more oxygen. Then it's back to the fishing trip. The keys are the same as those for *Booty*, but the Open/Hold key has no effect. And there's no need for the infinite lives POKE as it's impossible to die. All in all, a bit of a snore!

P J S Melia
Ormskirk, Lancs

Whale I'll be blowed — there's something very fishy about this. Sounds like there's a bit of shark practice going on. (OK, that's enough fish jokes. Ed.) *This brings back memories of our Jet Set Loony letter published some months ago. Anybody who gives it a go and finds it has no effect, please don't give us the verbals on the jellybone — blame it on Jaws Melia. Troubleshootin' Pete.*

PETE PICKING

What about From the Hip in the June issue then? I just had to write, pointing out one teensy-weensy mistake (and collect a Trainspotter Award on the way?) (*D'you think we give 'em away to just anybody? Ed*) In the headerless code routine for saving a SCREEN$, you load the 'DE' register with 6912 bytes — correct so far. Take note Kev! (*Nowt to do with me. Ed*). However, when you go into the verification of the file the number of bytes seems to have changed to 6192.

I've come up with the following possibilities:

1. (Regretfully) I need a new pair of glasses
2. You need a new pair of glasses

Statement 1 could be correct because of my old age — nearly 15! But if the management admits that this was a total cock-up (*you'll have to torture us first. Ed*) and promises to never let it happen again, I'll forgive you.

If you agree with me and presume that option 2 is the cause, I'd sue your optician and emigrate to Northern Siberia.

Nit-pickin', hole-pickin' Damon (Mastermind) Pass

OK, so I'm packin' my bags already ... Troubleshootin' Pete.

PIECES OF EIGHT

I know that imitation is the sincerest form of flattery, but did you know that one of your rival rags (*we have rivals? Ed*) that claims to cater for Sinclair users, published your *Alien 8* hacking program line-for-line, word-for-word in their letters page.

A concerned and dedicated reader, Room 8, Starship Ultimate, In Orbit Somewhere, The Inky Void.

PS. I was just flicking through the rag in a newsagent, you understand — I'd never consider actually buying it!

Well, shiver me timbers, lads and other such piratical phrases. Someone has blotted their copybook, if you see what I mean! Still, it's good to know that the only newsagents stocking the so-called magazine are in the Inky Void. Ed.

WOOD WORK

Desperate Microdrive owners may welcome this tip. Having CATed and found the program required, remember that the Sinclair directory doesn't show any space or spaces tacked onto the end of a title — yet the Microdrive recognises a space as a title.

This may seem all very obvious (*why aren't you reading the next letter then? Ed*), but if your Microdrive can't seem to find the program it's just displayed in the CAT, try adding a space, or spaces, on the end of the program title you're after.

I've rescued quite a number of my programs this way.

Miss J R Wood
Altrincham, Cheshire

Well, unless I'm slightly sozzled when I'm programming (But, Pete, you're sozzled 25 hours a day. Ed) (How else d'you think I can cope with your stupid comments, hic. Pete) I hardly ever type in spaces after the filename. But your information is very valuable if you're using other people's cartridges. Mind you, if 'other people' want to be awkward and hinder your progress then they can always throw in a couple of control characters to stop you. Try sussing those ones out. Troubleshootin' Pete.

LEONARDO — TOO HARD?

I'm writing to complain about your unfair review of Leonardo in issue 15. Penny and Pete compared four new graphics packages and Leonardo was properly slagged off. For example, Pete comments that the cursor moves at a snail's pace and that only one cursor speed is available. If he'd taken the trouble to read the manual properly he'd have seen that the cursor can be adjusted to travel via any parameters the user chooses. Also, does the finishing time include the time taken to pre-plan the picture before starting? I used Leonardo to produce a very similar graphic and it took just over an hour and a half.

In fairness the manual is a hard slog, but once mastered it's brilliant. Three other mags rated Leonardo very highly, as I do — if only you'd taken the time to explore fully the program first.

Richard Hewison
Luton, Beds

Standing alone, Leonardo has its advantages — and its fans! It's just that I'm not one of them and that's based on a comparison of four similar packages not on prejudice. It's the YS *style to compare products rather than considering them in isolation as we believe the results are more enlightening. Let's face it, the cursor speeds you talk of are pathetic — especially when compared to the opposition. Sure, you can change the step size to move more quickly but talk about faffing about. And no, the preparation time wasn't included.*

It's just that I found the other packages were more efficient and more user-friendly — try them and come back to me. But in the end, if you're happy with what you've got then fine — that's what counts I s'pose. Troubleshootin' Pete.

UNREPEATABLE OFFER

I concede that you lot are a pretty fair set of hackers, but where did you get the POKE for infinite 'Last ever opportunities for *YS* MegaBasic?'

Does this mean we'll be getting infinite 'Reviews of the same game', or heaven forbid, infinite 'editorial one'liners'?

Bob Scurfield

Good news for everyone who's missed this letter this month — we'll be repeating it for the last ever time in the next ish! And the bad news for everyone who still hasn't taken advantage of our last ever opportunity to acquire, YS *MegaBasic at our specially reduced rate — you're too late, mate. It'll now set you back £9.95 in good shops everywhere and, no doubt, a few bad ones as well — we're not fussy just so long as everyone gets a copy 'cos it's still the best value up-grade for your Speccy. End of plug! Ed.*

KLAPPED-OUT KAPPA

In *YS* issue 8, I read a mini-review of the Kappa Keyboard. Since I thought it could be worth the outlay, I wrote to the company to ask for the low-down and then a couple of weeks later I sent off a cheque for £48.

The keyboard duly arrived two weeks later but on connecting it up, I found it didn't work. So, back it went to Kappa. That was last December.

Four weeks later back it came with a letter saying it would now work. You guessed it — it didn't.

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Off it went again — to a Mr Steve Drain — and it took till the end of April for the second replacement to arrive. I've tried to get my money back from Kappa but they're ignoring my letters and I've had no success on the phone. Can you help at YS?

Christian Techtmeier
Ense, West Germany

We've been unable to contact Kappa as well — so, when you read this Kappa, perhaps you'll let us know what's happened in Christian's case. And what's happened to you! Ed.

PSEUDS CORNER

I forgive you for blowing my cover in the Mastermind program in issue 15 when I was trying to hide behind a spude..psod...pen name. I even forgive you for the subtle sabotage of a text-vanishing POKE! Why am I so charitable? (*We pay you too much obviously! Ed*). It's all because of your lovely Art Editor (*huh? The Art Ed's boyfriend! T.P.*). I've just been having a drool over her talents in the current *YS*.

Quality paper (*of course, nothing but the best will do in the MD's loo! T.P.*), very attractive layout and that superb cover. (*OK, so much for the Art Ed, but what about the mag? Ed*).

Chris Somerville, alias Chris Winterton
Llandudno Junction

Will the real Chris Somerville please step forward. This doesn't sound like one of the YS contributors at all — there's not really enough moaning in the letter! Ed.

INFERIOR DECORATING

I'm on the scrounge for a coveted *YS Trainspotter Award (too late mate it's gone this month! Ed.)* I spotted an almighty large (male hen)-up in the Interior Decorating feature in *YS* issue 15. Now since when has 256 bytes in hex been 100h, eh? Well, of course it should be 0100h so the incriminating sentence should read' ... at location C000h and goes up in sequence at C100h, C200h and so on.' And I thought that dear ol' Dave Nicholls was infallible!

Paul Clark
Durham

I s'pose one explantation is all that hair must've got in his eyes. I keep on telling him that hacking and hippydom just don't mix. Ah well. Ed.

YOUR ★@!@★!!★

We really don't have to keep putting up with poor treatment from hard and software companies — with your help, that is! (*I knew we'd get dragged in somehow! Ed*). How about a star/bleep column — I'm sure you can find a witty headline — so that the good 'uns can receive a slap on the back and the duffers get a kick up the ★★★@★!!. Here are my nominations, anyway:

BLEEP — Softek, for ignoring (since January) my request for help when the FP compiler version of Business Graphics wouldn't run. I've sent them Basic and machine code on a tape.

STAR — Sunshine Books and author, John Durst for pleasant and prompt help when I got into difficulty with Machine Code Graphics and Sprites.

C Anne Wilson,
Netherton, Huddersfield

OK, slaps and kicks to the usual address — and how about a witty headline while you're at it. Look at it this way — anything that takes the heat off us for a while can't be all bad! Go on, you've got nothing to lose but a second-class stamp. Ed.

IN YOKE

Thanks to L A Privett for his excellent program in *YS MegaBasic*'s PLAY. The only problem is that it falls foul of the old IN problem, that is reading the sixth bit. Those of us with Issue 3 Speccies will find it only works intermittently — if at all.

To put it right, all you have to do is reduce the IN readings by 64 in each case.

Also, cheers to Mike Leaman for his Sprite Magic — is there a space zap'em up game in there somewhere?

Martin Reid
Chorley, Lancs

BLACKBUGS

First, let me congratulate Peter Simmons on his conversion of the game Blackbox to the Speccy (*YS* 13).

Unfortunately, a number of bugs exist in the program as published.

Firstly, lines 582 and 585 appear to have been omitted in the printing. Secondly, in the program, the flashing cursor for placing pegs acts as an eraser for any pegs already in position. Thirdly, if more than nine rays are used (excluding those 'absorbed' or 'reflected') the program continues to return 9s and that gets pretty confusing.

As you've probably guessed, I've come up with some modifications to the program to make it work. The program could have been made more elegant if control codes had been used but they're difficult to reproduce in publication.

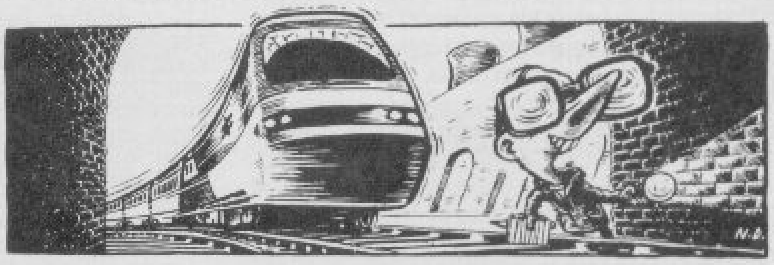
Trevor P Dutt
London W1

In fact, the problems that you may have found in Blackbox were there because the program contained the control codes that Trevor mentioned. If you're submitting a program to us, avoid using them as we just can't cope — who said typical? Still, now we have the cure for this problem anyway. Troubleshootin' Pete.

```
105 LET i=6
582 IF e1 or w1 THEN GO TO 800
585 LET c=c-1: IF c>7 THEN GO TO 510
907 IF ATTR (u,v)=56 THEN LET a$="B": PRINT
AT u,v; PAPER 7; INK 0; INVERSE 1;a$: GO TO
915
911 IF a$="B" THEN PRINT AT u,v; PAPER 7; INK
0; INVERSE 1;a$
947 IF ATTR (u,v)=56 THEN LET a$="B"
950 PRINT AT u,v; PAPER 0; INK 7; INVERSE
1;"?"
959 IF INKEY$="i" AND a$="B" THEN PRINT AT
u,v; PAPER 7; INK 0; INVERSE 1;a$: GO SUB
2060: RETURN
970 IF INKEY$="p" THEN PRINT AT u,v; PAPER 7;
INK 0; INVERSE 1;"B": GO SUB 2060: RETURN
1300 IF def>9 THEN LET def>0: LET i=i-1: IF
i=4 THEN LET i=6
1310 PRINT PAPER 0; INK i; AT j,k;def
1320 IF w1 OR e1 THEN PRINT PAPER 0; INK i;
AT a,(9*w1)+(20*e1);def
1330 IF n1 OR s1 THEN PRINT PAPER 0; INK i;
AT (5*n1)+(16*s1),b;def
1430 IF ATTR (y(f),x(f))<>56 THEN LET wr=wr+1

NB. "B" is a graphics caracter.
```

THE YS TRAINSPOTTER AWARD



Last month I wrote a letter to you boys at Rathbone; I had trainspotted our friend Sabreman and thought this deserved recognition. Perhaps B Bulter's letter arrived before mine, but don't you think that I should've got a little publicity? Something along the lines of 'This error was also spotted by ...' (*Cor, you don't want much, do you? Ed*).

I wouldn't normally complain, but this is the second time you at *YS* have totally ignored me. What's wrong with me? (*Shall we tell him? Ed*) (*Nah, leave him in suspense. T.P.*). My sense of humour isn't that bad! Is it?

But don't worry, all can be rectified (*how's that? Ed*), by giving *me* the Trainspotters' Award this month. There, that's not asking too much, is it? But what for, I hear you cry! (*You'll be the one in tears if you don't get on with it! T.P.*) OK, I'll tell you ...

In your Space Ace article issue 15, you tell us that there's a picture of a coffin floating off into a timeless void. Well, there's plenty of void but I can't see a coffin. (*We're just knocking you one up now! Ed*). There, does that make me worthy of the award? Please say yes!

R Harries (Trainspotter, failed)
Milton Abbas, Dorset

Just goes to show what a big softie I am. You're now a fully fledged Trainspotter with a certificate to prove it. 'This error was also not spotted (until it was too late) by me, T.P., Art Ed or the printers ...' Oops. Another nail in the coffin, eh? Ed.

JUST A TICK!

It may be rude to interrupt but it's certainly dead easy now, 'cos* Toni Baker *'s back with a program that lets you have up to sixteen interrupt routines running at once. You'll wonder how you ever managed before!

You may have noticed just how many routines there are these days that are interrupt driven — that's to say, routines that make use of the Spectrum's interrupts. They're run automatically once every TV frame (50 times per second) and they make it quite possible for the Spectrum to appear to be doing two things at once.

The big drawback is that they're all pretty exclusive. If you've got one running it's very difficult to get another one running at the same time. You can have, for instance, a real time clock *or* moving sprites *or* continuous music — all during the running of normal Basic, of course, but you can't have more than one at once — or, at least, it's more than a little tricky.

MANAGEMENT TECHNIQUES

This program provides the solution — it's called an Interrupt Manager and with it you can have up to sixteen user-defined interrupt routines running together. One routine, say, runs a clock, another plays music and both could run together quite happily without disturbing normal Basic or machine code.

The Interrupt Manager not only knots the separate interrupt routines together but it can also save space by making each interrupt routine a little simpler. For instance, it's normally necessary in an interrupt routine to preserve all the registers. The manager looks after that for you so you can corrupt the registers as much as you like. You'll only need to take special action if you want to make use of the alternative registers as well.

Another point that's often glossed over is that many interrupt routines need to take very special precautions when calling routines in the ROM. If you don't, and you have Interface 1 attached, then the Spectrum's very

THE INTERRUPT MANAGER

This is the Interrupt Manager. We haven't presented you with a Hex Loader program to help you type it in — it's not that we're mean (though we are, of course) it's just that to use the program fully you'll really need an Assembler. To make the whole routine work, you must first call it by typing RAND USR 61441. This clears the complete Manager table and makes sure the routine's accessed every 50th of a second.

```
EFFF                ORG  0EFFFH
EFFF 15F0     INTVC DEFW MNGER
```

These two bytes store the address of the Manager program. The low byte of this address must always be FF — for example, we've located it at 0EFFh.

```
F001 2167F0   INITI LD   HL,TABLE
```

This part of the program must be called for the Manager to work — it may also be called while the Manager is in operation when it cancels all the user-defined routines from the table.

```
F004 1168F0         LD   DE,TABLE+1
F007 015000         LD   BC,0050H
F00A 3600           LD   (HL),0
```

Resets the table flags.

```
F00C EDB0           LDIR
```

Resets the remainder of the table.

```
F00E 3EEF           LD   A,0EFH
```

Loads the A register with the high byte of the interrupt vector (INTVC).

```
F010 ED47           LD   I,A
```

Copies the value in the A register into the interrupt register.

```
F012 ED5E           IM2
```

Selects interrupt mode 2 — this is the mode that allows you to use your own interrupt routines on the Spectrum rather than the one in ROM.

```
F014 C9             RET
F015 F5       MNGER PUSH AF
```

The Interrupt Manager program starts here. This is called by the interrupt procedure fifty times a second.

```
F016 E5             PUSH HL
```

```
F017 2167F0         LD   HL,TABLE
```

Points HL to the Manager table.

```
F01A 7E             LD   A,(HL)
```

Loads the A register with the main table flags.

```
F01B 23             INC  HL
```

Points HL to the first entry in the table.

```
F01C 1F             RRA
F01D D43800         CALL NC,0038H
```

Calls the ROM interrupt procedure if it's required.

```
F020 1F             RRA
F021 303F           JR   NC,MNOFF
F023 F3             DI
F024 C5             PUSH BC
F025 D5             PUSH DE
F026 0610           LD   B,10H
F028 5E       MNLOP LD   E,(HL)
F029 23             INC  HL
F02A 56             LD   D,(HL)
```

Loads DE with the routine address (if specified).

```
F02B 23             INC  HL
F02C 4E             LD   C,(HL)
```

Loads C with the flags for the routine.

```
F02D 23             INC  HL
F02E CB29           SRA  C
F030 302A           JR   NC,NONOW
```

Jumps if the routine is de-activated.

```
F032 35             DEC  (HL)
F033 2027           JR   NZ,NONOW
```

Jumps unless the routine has priority.

```
F035 23             INC  HL
F036 7E             LD   A,(HL)
```

Loads A with the normal routine priority.

```
F037 2B             DEC  HL
F038 77             LD   (HL),A
```

Stores the priority.

```
F039 C5             PUSH BC
F03A E5             PUSH HL
F03B EB             EX   DE,HL
```

Places the routine address into HL.

```
F03C 3A0000         LD   A,(0000H)
```

Loads A with the first byte of ROM. If A holds F3 hex then the Spectrum ROM is in use but if it holds E1 hex then the shadow ROM is in use.

```
F03F A9             XOR  C
F040 FEF0           CP   0F0H
F042 2811           JR   Z,SHFRS
```

Jumps to call a shadow ROM routine.

```
F044 FEE0           CP   0E0H
F046 2805           JR   Z,SPFRS
```

Jumps to call a Spectrum ROM routine.

```
F048 CD66F0         CALL MNCAL
```

Call a sub-routine that's in the current ROM.

```
F04B 180D           JR   RETIN
F04D 2251F0   SPFRS LD   (SPJP),HL
```

Stores the routine address within the program.

```
F050 D7             RST  10H
```

Calls a Spectrum ROM routine.

```
0002          SPJP  DEFS 02H
F053 1805           JR   RETIN
F055 22ED5C   SHFRS LD   (5CEDH),HL
F058 CF             RST  08H
```

Calls a shadow ROM routine.

```
F059 32             DEFB 32H
F05A E1       RETIN POP  HL
```

Puts the address of the Manager table into HL.

```
F05B C1             POP  BC
```

Puts the count of the remaining entries into the B register.

```
F05C 23       NONOW INC  HL
F05D 23             INC  HL
```

HL now points to the next entry in the table.

```
F05E 10C8           DJNZ MNLOP
F060 D1             POP  DE
F061 C1             POP  BC
F062 E1       MNOFF POP  HL
F063 F1             POP  AF
F064 FB             EI
F065 C9             RET
F066 E9       MNCAL JP   (HL)
```

Jumps to tne sub-routine at the address stored in HL.

```
0051          TABLE DEFS 81
```

Eighty-one bytes of memory are set aside for the table

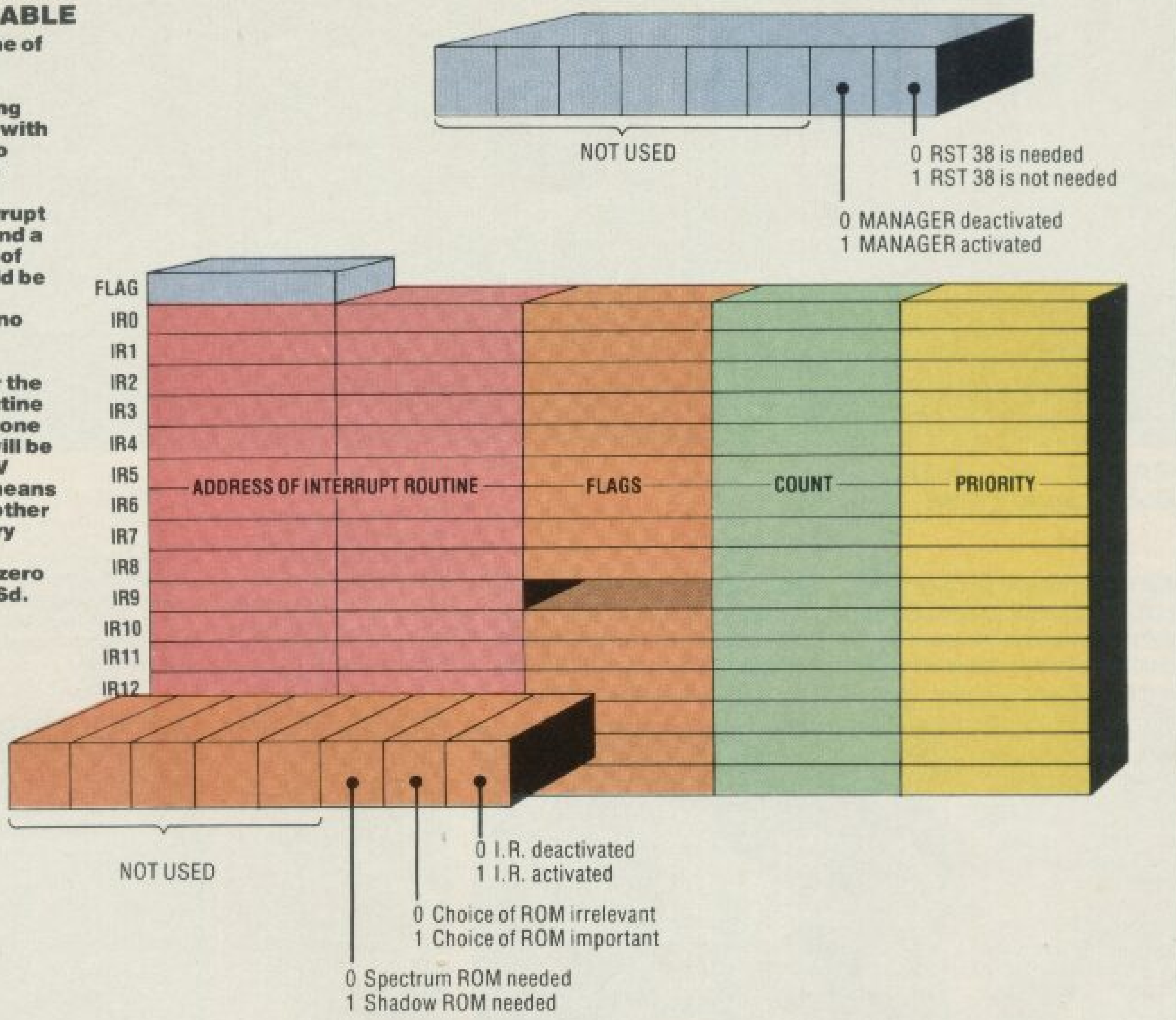
THE INTERRUPT TABLE

This table is the backbone of the program. You can deactivate the entire Manager simply by loading the first byte in the table with zero — this means that no interrupt routines will be operating at all.

Individually, each interrupt routine has an address and a priority. The middle byte of the five bytes used should be zero if the routine's deactivated or if there's no routine at all.

It's also important to remember that the lower the priority, the more the routine will be used. A priority of one means that the routine will be carried out once every TV frame. A priority of two means it'll be carried out every other frame. Three means every third frame and so on.

Also, make a note that zero here is interpreted as 256d.



likely to crash if an interrupt occurs whilst the Shadow ROM's paged in. The Interrupt Manager program avoids this trap — at each stage it'll determine which ROM is current, which ROM is needed, and it'll switch between the two as desired. In other words, the individual interrupt routines don't have to concern themselves with worrying about ROMs — the Manager will take care of it all.

Also, interrupt routines usually require a RST 38 instruction. This ensures that the keyboard is properly scanned for Basic. Not so with the Manager though. RST 38 is automatic, and individual routines needn't concern themselves with it. Still, you can deactivate this facility if, for example, you want to modify the keyboard scan or do without it altogether.

BRIEF ENCOUNTERS

OK, so now you've got an Interrupt Manager, what are you going to do with it? Just to get you started here's a selection of simple routines that have been compiled to show you how easily the Manager can be used. If you want a demo, type them into your Assembler at memory location 61800. Once you've got the Manager and the demo program in memory you're ready to go. As you'll see the first routine randomly changes the border colour — to make it work, type:

POKE TABLE+(INTNO*5)+1,LOW BYTE
POKE TABLE+(INTNO*5)+2,HIGH BYTE

This places the address of the routine on the Manager table — in this case the high byte is 241 (F1h) and the low byte is 104 (68h). Now type:

POKE TABLE+(INTNO*5)+4, COUNTER
POKE TABLE+(INTNO*5)+5, PRIORITY

If the counter and the priority both hold 10, this means that the routine will be called every ten 50ths of a second — of course, you can change this as you please. Now (finally) type:

POKE TABLE+(INTNO*5)+3, FLAGS

The flags hold the info that tells the Manager which of the two ROMs to access if they're needed, or even if the routine's to be called at all. In this case the flags should be 1.

In all these examples TABLE refers to the start location in memory of the Manager table which here is 61543. Now number your routine according to where on the table it's to appear — the number you assign it is, of course, INTNO.

To use the other four routines, all you've got to do is change the values for the low and high bytes, the counter, the priority and the flag. The last demo routine is the only one where the choice of ROM is important as it uses the Spectrum's, so make sure you have the correct value in FLAGS when you're mucking about with it.

Finally, if you still can't get the demo to work, change the value in the master Flag at 61543 to 2.

```
F168                ORG   61800
F168 ED5B785C BORDC LD    DE,(23672)
F16C 1A             LD    A,(DE)
F16D E607           AND   7
F16F D3FE           OUT   (254),A
F171 C9             RET
```

This is a simple routine that changes the colour of the border at random.

```
F172 210058   INKCH LD    HL,22528
F175 7E       ICLOP LD    A,(HL)
F176 E6F8           AND   248
F178 4F             LD    C,A
F179 ED5F           LD    A,R
F17B E607           AND   7
F17D B1             OR    C
F17E 77             LD    (HL),A
F17F 23             INC   HL
F180 3E5B           LD    A,91
F182 BC             CP    H
F183 C8             RET   Z
F184 18EF           JR    ICLOP
```

This is a slightly more complicated routine that randomly changes the first three bits of every byte in the attributes file and so changes all the Ink colours.

```
F186 210058   PAPCH LD    HL,22528
F189 7E       PCLOP LD    A,(HL)
F18A E6C8           AND   200
F18C 4F             LD    C,A
F18D ED5F           LD    A,R
F18F E638           AND   56
F191 B1             OR    C
F192 77             LD    (HL),A
F193 23             INC   HL
F194 3E5B           LD    A,91
F196 BC             CP    H
F197 C8             RET   Z
F198 18EF           JR    PCLOP
```

This is very similar to the previous routine but changes the Paper colours.

```
F19A 210040   SCRGB LD    HL,16384
F19D 7E       SCRLP LD    A,(HL)
F19E CB0F           RRC   A
F1A0 A7             AND   A
F1A1 77             LD    (HL),A
F1A2 23             INC   HL
F1A3 3E58           LD    A,88
F1A5 BC             CP    H
F1A6 C8             RET   Z
F1A7 18F4           JR    SCRLP
```

This routine does a wrap-around scroll to the right on each character on the screen within its own character block.

```
F1A9 110A00   KEYBP LD    DE,10
F1AC 21D007         LD    HL,2000
F1AF 3A085C         LD    A,(23560)
F1B2 6F             LD    L,A
F1B3 CDB503         CALL  949
F1B6 C9             RET
```

This routine produces a short bleep and the frequency depends on the last key that was pressed.

THE GENERATION GAME

Games creators aren't new exactly but they're still the best and quickest way for even the duffest programmer to knock out some ace arcade action. And talking of duffers, we've asked* Tony Samuels *to create a couple of classics while* Peter Shaw *looked over his shoulder and took notes.

What's all this then? An in-depth review of two programs that have been around long enough to qualify as golden oldies? That's true but it's really only now that everyone's caught up with what the programs were originally trying to do. New computers like the Macintosh have shown that you don't have to be a machine code whizz to use a computer to the full and this attitude is filtering through to the Spectrum. Look at *The Artist* program we reviewed a couple of issues ago — simple to use but producing some spectacular visual results. Well, these two games creators

GAMES DESIGNER
Quicksilva/£9.95

MAXBURGERS FROM OUTER SPACE

Not now available on Tony 'Slim' Software, this is a game that's gonna really knock your Thicko Shakes for six. Feast your eyes on the format, gorge yourself on the graphics. You play the part of an unsatisfied fast foodie who's after his grub — first the burgers, then fries, Big Max and turbo-charged apple pies. Just shoot 'em up and count the calories.



Take a look at the main menu. You'll find here all the options you'll need to take you further into the editing menus, and on the way to producing your very own monster megahit.

There are eight different flightpaths for your aliens to follow. Choose them with the Movement Editor and use them in combination or on their own to get those enemies zig-zagging.

This option takes you on to the Attack Wave editor. Here you can define the scoring system, the speed and the next screen the program'll look to after the current level is completed.

Use the Configuration Menu to tell *Games Designer* how your game will operate. You can choose from four types of game format — *Space Invader, Scramble, Berserk* and *Asteroids*. You're also asked what colour back- and foreground you require and what type of special FX (*Groan! Ed*) you want — stars, for instance.

You've got up to 32 sprites to play around with on each game. Use this chart to set them up, but a word of warning — don't lose the manual or you're in big trouble. *Games Designer* loses one point for lack of menu-driving!

The Play Game option allows you to play the game you're currently editing. That way you can judge whether an alteration works or not.

The Sprite Menu will take you on to a further set of menu options that allow you to change the shape of the sprites for the player, aliens, explosions and so on.

These sprites, 00 and 01, are the two-stage animation sprites for the first screen. You can have anything up to four stages of animation.

Your sprites can only be 12 pixels deep by 12 wide. That's considerably smaller than the ones you can create with HURG but they are 'real' sprites. By that, I mean they're smooth scrolling and fast.



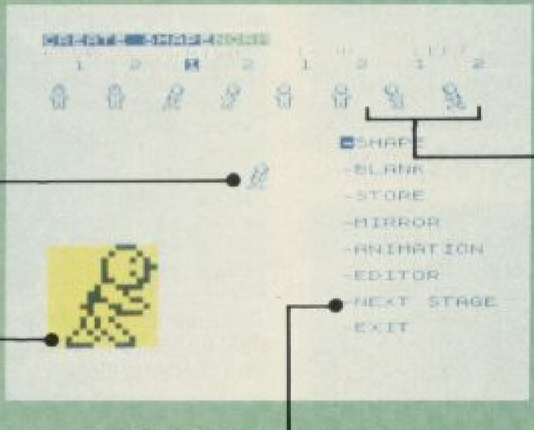
Defining sprites is pretty odd to say the least. You create half the sprite at a time and then use a binary-style control to set or reset each pixel.

If you want to end with a bang, not a Wimpy, then you'll need to use the explosion sprite that's kept in the last four stages of animation. You can define exactly what the explosion looks like which is an improvement on *HURG* — that only lets you define its size.

HURG
Melbourne House/£14.95

MANIC MAXBURGERS

Also known as *Mortician Max*, the second offering from the Tony Samuels school of second-rate software takes the platform game onto a whole new level. Here you have to wander round the Maxburger factory looking for the vital victuals. Scoff the lot but watch out for the heavies — there's Thicko Shake closely followed by Derek Dishcloth and Sid Sausage. So, get eating and get out'a there!



This little chap was brought to life using the editor option. By choosing the other options he can be mirrored, animated and so on, which makes it much simpler to create his brothers and sisters if they're all basically the same.

Take a look at the editing window. Here it's 16 by 16 pixels but it can be anything from 8 by 8 up to 16 by 32. *HURG*'s based on character blocks so you can have bigger sprites but don't expect them to move as smoothly.

If you exit to the next stage, you can set the animation and movement speeds. You'll be shown your animated character running across the screen as you alter the parameters.

The idea behind the collision table is quite simple — everything that appears on the playing area can be recognised as soon as your character comes into contact with it.

These characters have been designed for two-stage animation — our little Willy-clone walks to the left and to the right, but Tony was too laid-back (*shouldn't that be lazy? Ed*) to animate the up and down movements.

Your first task in Collision Mode is to pick an Ink colour for your own character. Your only restriction is that you can't colour him in, the same as anything else on the screen.

Here's the key to understanding the collision table. The 'no go' symbol tells you that when your little man touches a combination of Ink and Paper designated as a 'no go' area, he'll be able to stand on it but not pass through. The 'eat' and 'crash' symbols work in much the same way and the go symbol covers the rest.



The collison table works by telling the games designer routines what to do when your character hits an object. It's all done with attributes so take care that you don't use the same colour for completely different objects.

You can chop and change these symbols by choosing a character from the menu and then positioning it on the grid using control keys or joystick.

really set the trend and it's worth taking a look at how they've stood the test of time and whether they'll help you transfer all your brilliant ideas into code.

So, what do they have to offer? Well, that's easily answered — they both allow you to create machine code style games without having to learn a programming language first. But let's not pretend, the games you write won't be as good as the ones you could write in machine code. But they will be quicker to bash out and they'll be a whole lot better than anything you could knock up in Basic — and a whole lot simpler too.

If this sounds like just what you've been looking for, the big question is will you be able to create the sort of games you've always dreamed of writing? Well, life isn't all a bed of ROM chips and it's unlikely that you'll get precisely what you're after.

Of the two programs, *Games Designer* is the less flexible as it only allows you to create shoot'em ups. But on the plus side, you can produce games more quickly and easily with this package. With *HURG* you can also have a go at platform and pacman type games but its animation and sprite handling trip it up when it comes to final presentation.

The most appealing aspect of both programs — is that they're menu-driven. This is what sets them apart from other games designers like *White Lightning*.

Brilliant as that program undoubtedly is, you still have to become proficient at a programming language — Forth in this case — and that can require the skills of a brain surgeon. No, with *Games Designer* and *HURG* the menus guide you as you create your sprites, move them and animate them. The program then puts this information into a game buffer that's looked at by the executive

Study this carefully — you'll find it the most useful menu in the game. Its function is to define what the aliens get up to on each level, how many you'll have to face and the consequences of being zapped by one.

Here you can control the speed of your aliens and whether or not the nasty critters drop bombs on you. You're offered a choice of seven variants that cover slow speeds, fast speeds, turbo speeds and bomb-droppin', death-dealin' nastiness.

Each game has a basic eight levels but, of course, you can repeat any level to give the impression that you've created a megagame. This column lets *Games Designer* know where to go after the current screen's been completed.

Use the Anim column to define the alien animation. Just like the sprite designer, you'll need to have the manual close to hand if you're going to make head or tail of these numbers.



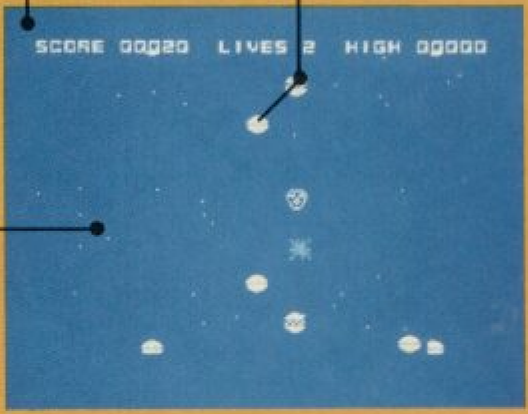
Pat here stands for pattern and defines the movement paths of each alien. You can create up to eight different movement patterns.

Max controls (*any relation to Max Headroom? Ed*) the number of aliens that have to be annihilated before you pass onto the next level. You can choose any number between zero (which is pretty pointless) and 99 (which is pretty impossible).

So, this is it — the end of all the hard work, the heartache and the sleepless nights. And in the true Tony 'Slim' Samuels style it's about food — *Maxburgers from Outer Space*. Need we say more?

At last, here are our two-stage fully animated sprites — the world famous *YS* bouncing burgers. What d'you mean you can't see 'em moving? Well, you'll just have to take our word for it! And for the fact that they're following the patterns that were laid down earlier.

The background stars were added with the Special FX function. They can be moved in one of four directions — up, down, left and right — but they don't affect the playing of the game. They're just there to add another element of interest and let's face it, Tony's game needs something to stop you nodding off!



There's no way of disguising that *Games Designer*'s pretty limited in what it can achieve — the four types of games you can bash out are all rather old hat. But the way it does it is excellent. The animation of the sprites is superbly smooth and there are tons of useful options for you to play around with. All in all, a lot of fun if you accept the limitations.

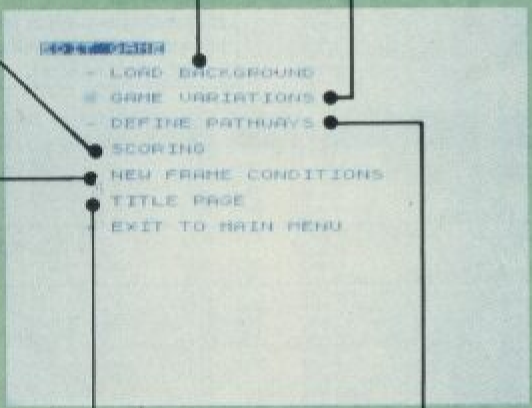
Overall rating: 8/10 Completion time: 2½ hours

HURG's been cleverly designed to run hand-in-hand with *Melbourne Draw*. Using the Load Background option, you can load in a previously designed Screen$ — without it the whole game's a bit pointless.

Game Variations is pretty self-explanatory — it just asks you which of the four possible games stored in memory you want to edit. It'll also takes you into the Player and Object Menus.

Tony created the background for *Manic Maxburgers* using *Melbourne Draw* — if you're a dab hand at pixel painting that means you can create some amazing levels to your games.

Scoring lets you define how quickly you'll amass the points when you eat or shoot objects. It'll also allow you to set a bonus once a new sheet's started — a bonus in itself over *Games Designer*.



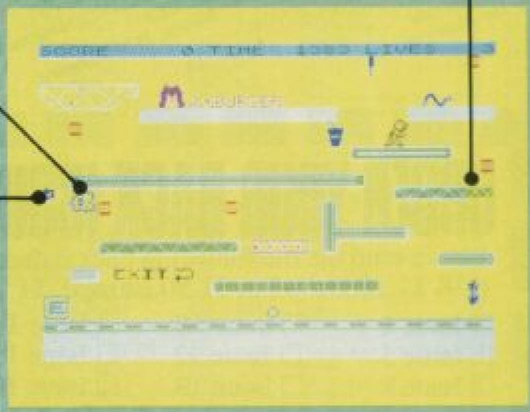
The New Frame Conditions option lets you decide how hard a player's got to work before he can move on to the next screen. You can make it tough by having him shoot or eat all the objects or you can just set a fixed time delay or make it when he's reached the exit point.

This is the goods that *Games Designer* didn't come up with — a title page. Here you can write your instructions using the very crude word processor and then add a bit of life by including some of your whizzo animated objects.

Use the Path Generator to set the course for your on-screen objects. If you prefer, though, you can get them moving in completely random ways and cut out this option altogether.

Meet Derek Dish Cloth who's on the tail of your silly Willy though there's an element of randomness thrown in to give him a chance to escape. Thicko Shake on the other hand moves completely at random but only in a limited area of the screen.

Now here's a nice touch. The platform looks as though it continues to the edge of the screen but the last two characters are coloured green on yellow rather than green on white. The Collision table has been set up so that if the man taps on it the whole platform just crumbles away. Nasty, eh?



The collision detector has been programmed to make anything that appears blue on yellow paper licensed to kill. So, all the nasties are this colour plus, for good measure, a few extra static objects that've been added with Melbourne Draw.

***HURG* really does have all the goodies you could wish for — if only the rough edges had been tidied up in the rush to get it on the shelves. True, it's much more flexible than *Games Designer* and offers a greater range of possibilities but it's really not all it could have been.**

Overall rating: 6/10
Completion Time: 4 hours including time on *Melbourne Draw*.

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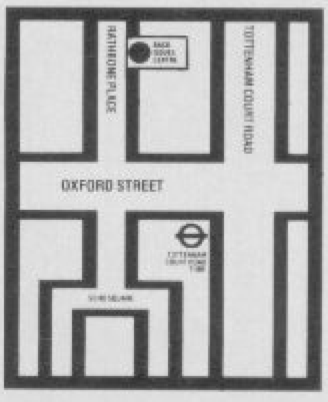
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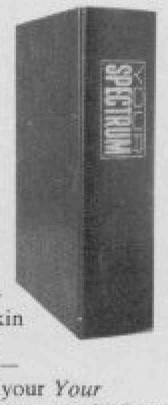
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routines when your game's running.

One area where *White Lightning*, say, scores heavily over these two, is its ability to save a game off independently of the main program. This could be done by having an editor in the low part of memory that would affect the game database in the top of memory. Then the sprite routines and so on would come somewhere in the middle and look at info in the database. This way it would be a doddle to save off the middle to top parts of memory as a stand alone game with a short bit of code to tie it all together.

As often happens in a comparative review like this, my choice falls somewhere between the two programs. If only the smoothness and slickness of *Games Designer* could be combined with the flexibility of *HURG*. As you can only plump for one, you must decide what sort of games you're after. If it's just shoot'em ups then go for Quicksilva's but if you're willing to sacrifice a certain amount of smoothness in favour of a wider range of games, go for *HURG*. One word of advice if you're veering towards *Games Designer* — it might be worth your while looking out for the version that Marks and Spencer brought out at the end of last year.

Finally, let's do a bit of dreaming — what would the perfect games creator package look like? Well, it's going to have to incorporate all the wham-bam-pow features of the new software. *Alien 8*-type 3D graphics would obviously be a plus as would a larger range of game formats to choose from. Also a graphics editor such as the one on *The Artist* would be a big help — even better if it were completely icon-driven. It's going to take a lot of work to come up with something with all those features, so it'll be interesting to see if any software house takes up the challenge. Of course, if you've written a program like that or you reckon you could, we'd love to talk to you at *YS*. Now there's something to think about!

	GAMES DESIGNER	HURG
SOUND EFFECTS	GOOD	EXCELLENT
JOYSTICK OPTION	EXCELLENT	EXCELLENT
SPRITE FLEXIBILITY	YEUCH!	GOOD
PIXEL MOVEMENT	EXCELLENT	YEUCH!
REDEFINABLE KEYS	OK	–
EASE OF USE	EXCELLENT	GOOD
OVERALL FLEXIBILITY	YEUCH!	GOOD
ALIENS ON SCREEN	OK	GOOD
MOVEMENT OF ALIENS	GOOD	EXCELLENT
OPTIONS FOR GAME INSTRUCTIONS	–	GOOD
TYPES OF PLAYER MOVEMENT	OK	EXCELLENT
OPTION FOR INVADER TYPE GAMES	GOOD	GOOD
OPTION FOR MAZE TYPE GAMES	–	OK
OPTION FOR SCRAMBLE TYPE GAMES	OK	GOOD
OPTION FOR PLATFORM TYPE GAMES	–	EXCELLENT
OPTION FOR BERSERK TYPE GAMES	OK	EXCELLENT
EXTRA FEATURES (eg. STARS)	GOOD	–
TIME OF DESIGN	GOOD	OK
PROVISION FOR OWN BACKGROUND	–	EXCELLENT
EASE OF DESIGN	GOOD	OK

KEY . . .
= EXCELLENT
= GOOD
= OK
= YEUCH!
– NOT INCLUDED



MAXBURGERS FROM OUTER SPACE

Whilst it could be said that it's stretching things a bit, having to cope with offensive junk food throughout the cosmos, it could also be said that deep space is the best place for burgers — all of 'em. This Maxburgers saga only really goes to prove just how easy an' quick producing sub-Asteroid clones is — which says nothing for the commerical software houses who still do it. 4/5

MANIC MAXBURGERS

So there we are, a classic off-the-peg platform game, admittedly a trifle vague in the killer ketchup avoidance department but nevertheless eminently playable. Dodging dirty dishcloths and savage side-orders to get through the four screens could lead to 48K's worth of anorexia, though. 3/5

BLACK MAGIC BOXES

If you're rarin' to go microdrivin' but you're havin' trouble convertin' your tapes, here are two black boxes that'll help you change your gear.* Iolo Davidson *takes a look at these drivin' movers.

The Mirage Microdriver and the Interface III from Evesham Micro Centre are hardware solutions to the problem of converting tape software to LOAD from microdrive. This is a development we've long been waiting for, and just like the number eleven bus, two have come along at once. Either model will enable you to convert your games tapes to fast loading microdrive versions, regardless of the tape protection method designed to prevent it — even fast loading systems.

These machines *do* work as advertised and their arrival will not be appreciated by the software publishers.

So, how do they do it? Well, both machines are small black boxes, about the size of a joystick interface, with a little red button that's pressed at any point during the running of a program to save the whole of the memory, plus the Z80 machine registers. What you get is a 'snapshot' of the whole computer at the microsecond that you pressed the button. When you load this instant frozen program later, it takes up exactly at the point it was stopped. You're advised to wait for a static frame like a score table to do the SAVE, so that the copied program doesn't subsequently LOAD straight into the action, but this is just for convenience. You can save it at *any* point you like, and even use the machine as an extended 'pause' feature, saving a half finished game overnight.

Interface III

Evesham Micro Centre £39.95

Opening, the case of this one reveals rows of 74 series TTL logic chips, one of which must be a small ROM. The box is plugged into the expansion connector on the Interface 1 or directly into the back of the Spectrum, which means that if you don't have microdrives, you can still use it, but only for tape copies, obviously. There is no through connector for attaching other add-ons, but that's not a problem as the unit need only be inserted during copying and not afterwards.

Operation is much the same as with the Microdriver at first. You load the tape which you wish to convert to microdrive, wait for a break in the program, like a 'press any key to start' frame, and press the red button instead. However, you don't get menu driven convenience with this one. First it saves a 'conversion' file to tape, and then you LOAD the supplied conversion software from tape. Now you get a menu, and you reload the conversion file from the tape and SAVE a stand-alone version of the game to tape or microdrive. Stand alone means you can LOAD and RUN the copied game without having to have the Interface III hardware connected.

That last feature makes this unit very attractive to the pirates. The worrying thing is that they can make a tape copy to be used by people who don't have an Interface III themselves, or even a microdrive. But I can't stress too much that it's illegal to make copies unless it's for your own private use.

The error trapping is definitely not up to much. Trying to SAVE a name twice to the same micro-cartridge dumps you out of the program with an invisible Sinclair error message, the Ink and Paper have been POKEd to be the same colour over the whole screen. If this is for protection then it's not only useless, but rather inappropriate in a product of this sort.

Those of you with disks may be able to use Interface III to SAVE a tape copy that can be re-saved to these other media, provided you have a tape header reader to find out the code addresses and lengths. I doubt it'll work on Wafadrives though, as the Wafadrive system software requires more RAM work space than microdrives. It's possible to BREAK into the conversion software (do BORDER 1 and INK 7 so you can see, but you won't be able to see yourself do it). That'll give your some idea of what goes on, but the SAVEs are done by code routines, so it's not just a case of a simple rewrite.

I found this device much less easy to use than the Microdriver, and all that tape saving and loading takes a lot of time. A particularly dumb feature is the fact that the system goes into a lock-up when it's finished making the first 'conversion file' and then again after saving the final copy. That means you have to pull the plug, and if you do that without first yanking out the microdrive cartridge then you'll corrupt it.

Microdriver

Mirage Microcomputers Ltd £39.95

This unit contains just two large chips, one of them a ROM holding the controlling software, the other a semi-custom IC with all the active logic. This is more convenient than the Interface III (which has to LOAD its software), and the scale of chip integration is somewhat higher tech, for you hardware addicts. The Microdriver software is menu driven, very easy to use and well error trapped. If you try to SAVE with the same name twice on a micro-cartridge, for instance, it stops and asks you whether you want the first file erased, a smart touch that.

The Microdriver plugs into the expansion connector at the back of your Interface 1, and it has a through connector for attaching other hardware, like a joystick. This is important, as you must have the Microdriver fitted when running your microdrive copy. In fact, you won't be able to LOAD it if the box is not in place.

One press on the little red button brings up the menu and a choice of LOAD, SAVE, POKE, RUN, or NEW. A program previously saved must be loaded from this menu. Most of the commands have a sub-menu for entering file names and the like. You are able to SAVE to tape as well as microdrive, but the Microdriver will not work plugged directly into a bare Spectrum — you must have the Sinclair Interface 1 fitted, and you need the Microdrive to LOAD or RUN the tape copy. This means that a tape backup is just that, a safety net, and not a pirated copy that could be sold or even used without the hardware. This is an obvious move by the manufacturer to avoid problems with those software houses that are still anti any form of back-up copying.

This means the machine is not much use for hacking, as it doesn't allow you to BREAK the program, but you can use the POKE function on the menu to enter the infinite lives POKEs from Hacking Away.

A TRUE CONVERT

Both units do the job, but I much preferred the Microdriver for speed and ease of use. However, hackers and disk users will find the copies produced by the Interface III easier to mess around with.

There are bound to be wails of anguish and all sorts of threats from software publishers over these two devices, but it's about time that long-suffering microdrive owners were allowed to make use of the things! Games programmers would be well advised to take Sir Clive's advice and put SAVE-to-Microdrive options into all their products. That would instantly remove the market for clever protection busting hardware before the stuff gets widespread. After all, most of us just want to be able to load programs faster, using the manufacturer's *own* upgrade, the microdrive, and we really oughtn't to be prevented from doing so. Until microdrive transfer is incorporated into all software, the makers of these two machines can claim a legitimate purpose for them.

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How *do* you stop Inspector Lestrade arresting Ffoulkes at one o'clock? Indeed how do you get inside Basil's London house? And how d'you prove to Lestrade who did it? Well, we don't know at *YS*, so we're not much use to **Andrew Freeman** of Staunton. But plenty of *YS* readers have got *Sherlock* sussed. Take **Simon Marshall**, for example, who recommends stopping Lestrade from wrapping up the case by challenging his ideas and giving him the letters from Basil's safe. But make sure you only open it after midnight. **Colin Stone** of Fareham also claims to be the number one on *Sherlock*. He suggests that you compare Basil's alibi when you go to his bedroom. I should think Basil would want to examine your credentials for being in his bedroom anyway! Colin also suggests that you closely examine Sandstone Bridge and any bookcases you come across — there may be secrets behind them. If you're stuck in *Sherlock*, get in touch with Colin or Simon.

And now for a few more clues from some ace adventurers. **J Abley** of Houghton Conquest has solved the problem of getting run over by those pesky *Gremlins*. Well, if it keeps happening to you, Weld Controls on the snow plough, with the gas bottles and welding torches from the petrol station.

Valkyrie 17 has stretched a few minds, but **Erik Gaspard** of Belgium has got the measure of it. He suggests that when you're leaving Schloss Drakenfeld SPRAY the security camera with shaving foam. A few more words that could come in useful are SHAKE for the pedestal if you can't reach the valkyrie diamond, and if you need a gun, EXAMINE the CORNERS in the cellar. If you still haven't cracked the code word for the room with the diamond, try Drakenfeld.

Now how can you resist this plea from **J Slings** of Belgium. I give up, he writes, *The Hobbit*'s got me. So, I must be the world's number 1 dipstick. I get stuck when the goblin captures me and throws me in his dungeon. The clue — a window should be no obstacle to a thief with friends — is probably telling me that Thorin's no friend of mine! I found the trap door and tried to tie the rope to almost anything, including Thorin's neck. (*And you wonder why he's not that pally! Ed*). Please help me before I use the rope to string myself up! You can get in touch with **J Slings** at Heikemvenstraat 63, 2190 B, Essen, Belgium, and the rest of your fellow *YS* readers by sending us your details to Give Us A Clue, *Your Spectrum*, 14 Rathbone Place, London W1P 1DE. Go on, give us a clue.

CHAMPION ADVENTURERS

Sherlock. Simon Marshall, 41 Biddle Road, New Parks Estate, Leicester LE3 9HJ.

Sherlock. Colin Stone, 2 Tor Close, Down End, Fareham, Hants PO16 8RX.

Gremlins. J. Abley, Royal Oak, Houghton Conquest, Bedford MK45 3LL.

Valkyrie 17. Erik Gaspard, Lelelndekstraat 57, 2700 Jint-Niklaas, Belgium.

Adventureland. Alex Marsh, 16 lan Road, Billericay, Essex CM12 0JX.

Legend. Tom Salinksy, 32 Wentworth Hill, Wembley, Middlesex HA9 9SG.

Tower of Despair. Andrew Fraser, 23 Douglas Row, Inverness, Scotland.

The Hobbit, Sherlock, The Golden Apple, Eye of Bain, Temple of Vran, Planet of Death, Ship of Doom, Urban Upstart, The Castle, Mountains of Ket.
Mark Thomas, 47 Elford Crescent, Colebrook, Plympton, Plymouth, Devon. PL7 4BT.

THE LOST ONES ...

Gremlins. How do I use the camera against the Gremlins in the YMCA?
Frederik Niksson, CVC Unit 3, Tenterden Storage, Apple Dore Road, Tenterden, Kent 2047.

Twin Kingdom Valley. I can't get to any decent locations like castles! Where is the treasure that the mystical voice wants?
Andrew Hooper, 4 Cole Road, Bruton, Somerset, BA10 0DA.

Sherlock. How do you stop Lestrade arresting Ffoulkes at 1 o'clock?
Andrew Freeman, Uplands, Boundary Place, Corse, Stannton, Gloucester GL19 3RG.

Pyjamarama. How do you get onto the moon and how do you break glass in the room that has numbers in it?
Stephen Hill, 83 Heath Avenue, Cellar Head, Stoke-on-Trent, Staffs, ST9 0HU.

Everyone's A Wally. I can get into the sewer and get the letter R, but I get killed by the shark on the way out. Please help!
Trevor Mathwin, Cross Hill Cottage, Stanhope, Co. Durham DL13 2TS.

The Hobbit. J.H.A. Slings, Heikantvenstraat 63, 2190 B, Essen, Belgium.

CELTIC RANGER

Begob and Begorrah. Prepare for a blast of the blarney from your man in Ireland,* Chris Cockayne *as he casts an emerald eye over* Dun Darach, *the new wan from Gargoyle Games.

From the coves of County Cork to the hills of Connemarra comes a strange tale that's shrouded in mist and mystery. Can it be true that Gargoyle Games has come up with a game that's identical to their previous hit, *Tir Na Nog*? Well, the hero, Cuchulainn the Great is the same, the graphics are the same but there are many more characters and the story has moved from the country to the town.

We start with our hero stalking the streets of Dun Darach seeking his faithful friend, Loeg, who's been abducted by the sorceress Skar and imprisoned somewhere in the town. While doing the rounds Cuchulainn comes across the inhabitants of the place, most of whom seem intent on ripping him off, visits innumerable shops and almost certainly ends up with a bad case of sore feet. Excluding your friend Loeg there are ten independent characters to meet but don't expect to find them all that easily. Some of them are out'n'out thieves like Kara and her sister, Keli but others will do you a good turn if you find what they're looking for. When you meet Bren, for example, he'll offer you a map for a fur — if only I could find a fur! Similarly, the courtesan Pita is obviously open to bribery but whenever I offer her money, she takes it saying 'Oh, how generous' then turns tail and trots off. It certainly is pretty generous of me, so how about something in exchange? Now my big problem is with the names — I don't know if they're Celtic originals but they sure as hell are difficult to remember. Every time someone approaches I have to go scuttling back to the booklet to see if he or she's a goody or a baddy. Why couldn't the hero have been given a good Irish name like Kevin? (Cor, what a crawler I am!).

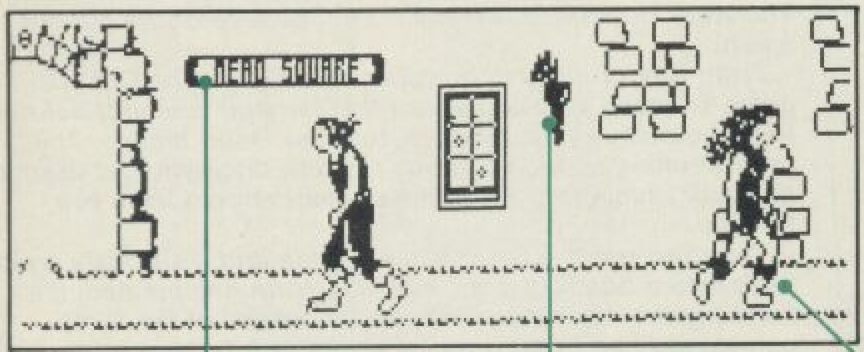
You can bone up on the background history of *Dun Darach* with the aid of the introductory booklet. There you'll find an extract from *Dinn Nemeton*, 'an anonymous, ancient and secret writing which may not be published in full' — doubtless because it's so silly! But do read it, along with the rest of the intro as there are a few clues to be gleaned and you're gonna need all the help you can get.

The animation of the characters is once again excellent as they walk in a very realistic though somewhat round-shouldered way — but then you'd be pretty round-shouldered after all that pavement pounding. There are also some nice touches that you can't see in the pictures like the bouncing locks of hair and the flickering torches on the walls. The character set is also kept in line with the general Celtic theme and is doubtless copied direct from the Book of Kells. I can't make head or tail of that either and it certainly becomes tricky trying to make out the Celtic script on the Speccy. What is it this shopkeeper wants to sell me? A sting? A sling? Or is it a string?

The game can be played as a sort of medieval *Minder*. Buying goods at one price and flogging them off at a profit. And of course, a nice little earner is to knock stuff off ('fell off the back of a horse and cart, guvnor'), though you'll still have trouble holding on to the

goods even without Sgt. Chisholm's presence. Only by building up a good deal of cash through stealing, selling, gambling or working (though don't ask me where yet), can you hope to get anywhere in the game. And if you take my advice it's an idea to duck into the nearest bank at the start and deposit your ready cash while you're finding your way around. The interest's not bad and you really can't trust anyone on the streets these days.

The game does lack a certain degree of excitement. There are no duels to the death and there are times when you long for the hero to break into a run — just this once. But no — plod, plod, plod. It's brain not brawn that's needed to conduct all the bartering, bribery and thieving necessary to complete the game. If you like *Tir Na Nog* and were left wanting more or you're prepared to put in a good few hours cracking this, then you could do worse than give it a go.





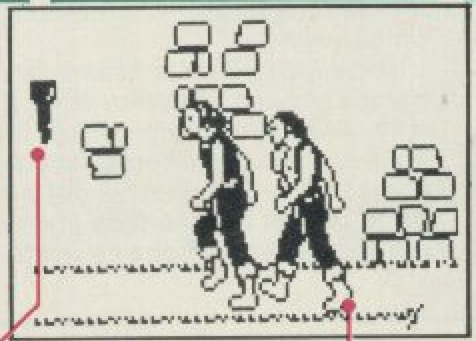
Here's where your quest begins. But where exactly is it? Read Square? Mead Square? Or is that Nerd Square? Ah, well!

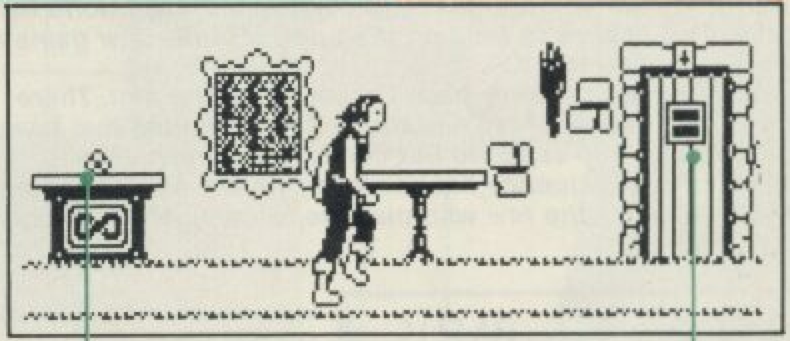
The flickering red flames of the torch is a neat touch and it helps you monitor the passage of time as they are lit and put out again as the days pass.

Here goes trouble! If you bump into Kara — and you just have — you can wave goodbye to your cash 'cos she's a practised pickpocket. And the bad news is that, yes, there are more just like her at home — a twin sister called Keli, equally as bad.

All of the shops are laid out on a similar plan with the shopkeeper behind this counter. You can either pay him for the goods you want or rush past with the hot property. Fortunately, he can't follow.







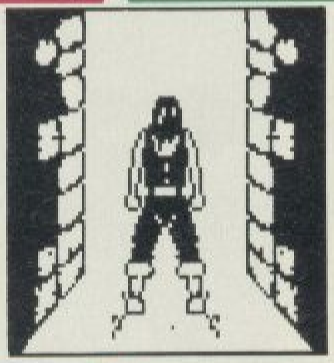
Here the torch is out, signifying that it's now evening — a bit cock-eyed that, as you usually light lamps as it gets darker. 'Tis Ireland begob!

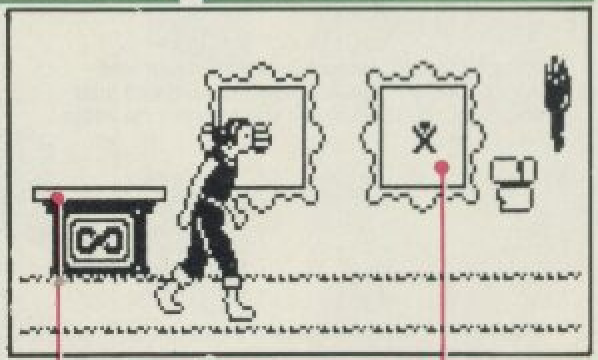
This is Ryde. He's friendly enough when you're 'clean' but if you're carrying nicked goods around, he'll have them off you as quick as a flash. So, watch out.

You've just made a deposit inside the bank. A wise move at the beginning of the game as you start with 2000 iridi (the unit of currency) that you can easily lose to the first person you meet. And the rate's not bad — 1 per cent per day. Now why don't Barclays pay that?

Each of the doors is numbered to help you identify it again. There's a certain logic to the numbering with similar numbers clustered together down the same street but some numbers appear to be repeated, so be warned.







You were warned — this is Keli so start legging it out of here. All the characters are represented by one female and one male type but to help you identify them, their names appear on screen with them.

The nature of each shop's business is displayed on a sign outside. The whole city of Dun Durach is populated by artisans from armourers to wine merchants so there's plenty to explore.

You can leave anything you're carrying on these shelves inside buildings and then return later to pick them up. There are also safe deposits dotted around town just for this purpose.

This is the art gallery. Presumably, there's some significance behind these paintings but we can't say we've sussed it yet!





Welcome to the gambling den — the easiest way to make a fast buck or lose the lot! Place your bet (min stake 200) on this counter for 2-1 odds on the following numbers: 2, 3, 4, 10, 11, 12.

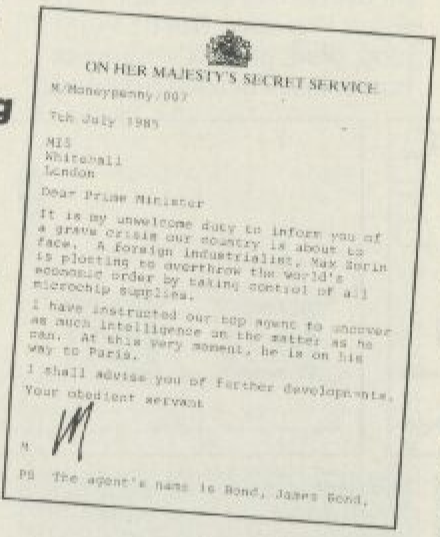
Will you take the risk. You'll get evens here but only if the numbers 5, 6, 8, 9 come up. And what's happened to 7? Perhaps there's a clue there.

Here are the dice built into the wall. They spin automatically whether or not you place your bet.

This is a portal that'll carry you quickly from one side of the city to the other. Usually the portation fee is 200 iridi but there's also a free one.

I, SPY...

Bond is back — as if you hadn't noticed! And now he's making his software debut in Domark's latest game based on the new film, A View to a Kill. The YS spies, Tony Samuels and Ross Holman have decoded the following message.


ON HER MAJESTY'S SECRET SERVICE

M/Moneypenny/007

7th July 1985

MI5
Whitehall
London

Dear Prime Minister

It is my unwelcome duty to inform you of a grave crisis our country is about to face. A foreign industrialist, Max Zorin is plotting to overthrow the world's economic order by taking control of all microchip supplies.

I have instructed our top agent to uncover as much intelligence on the matter as he can. At this very moment, he is on his way to Paris.

I shall advise you of further developments.

Your obedient servant

M.

PS The agent's name is Bond, James Bond.

There must've been late night meetings — money changing hands — clandestine rendez-vous — and plenty of secrets to be kept. But finally, Domark pulled it off — the computer marketing coup of the year. Bond has gained his license to thrill on the Speccy in the new game of the film. A View to a Kill.

And Domark certainly hasn't skimped on the plot. There are three sizeable chunks of the original celluloid that have been turned into separate but connected games. Plus there's a title sequence based closely on the film's opening and a finale for the few who manage to complete it (or cheat at it! Ed).

Each of the games loads separately but as you complete them you're given a code-word to take onto the next one. The first game is set in Paris and has you motoring round the boulevards in hot pursuit of the villainess, May Day as she parachutes down from the Eiffel Tower. It's certainly the weakest of the three games and any tension there might have been is completely destroyed by the poor programming. The car is pathetic and your control over it is non-existent — you can ignore the bit in the blurb about doing hand-brake turns as a joke. The game also has too many bugs to make it playable for long. OK, so you expect Bond to drive into walls occasionally but it'd be nice if he could get out again.

From a poor start, things start to look up. The City Hall game is based very closely on the film and seeing it beforehand helped us rescue Stacy, the new Bond blonde. The programming still looks pretty raw but once you get used to the poor animation, the game content should have you hooked.

The third game's set in a silver mine and it's Bond's task to defuse a bomb that the evil Max Zorin has planted. It's certainly the most inventive and innovative of the three games and has Bond running, jumping, climbing ropes and turning somersaults in his quest to find May Day and stop the explosion. But it's also a minefield when it comes to bugs. Bond can end up encased in solid rock, he lost his feet at one point (literally) and you even take a ride on a hidden lift that'll take you on a journey to the centre of the program! All this isn't to say it's unplayable. On the contrary, it's very addictive — if only the programming had been tidied up beforehand.

For all that they're based on the Bond film, these three games are very different from it. OK, who's the wise guy who said that's obvious? No, the Bond films are all about style and special effects, just the things that these three games lack. Still, they've got plenty of content and with three games on one tape you can't really complain about not getting your money's worth.

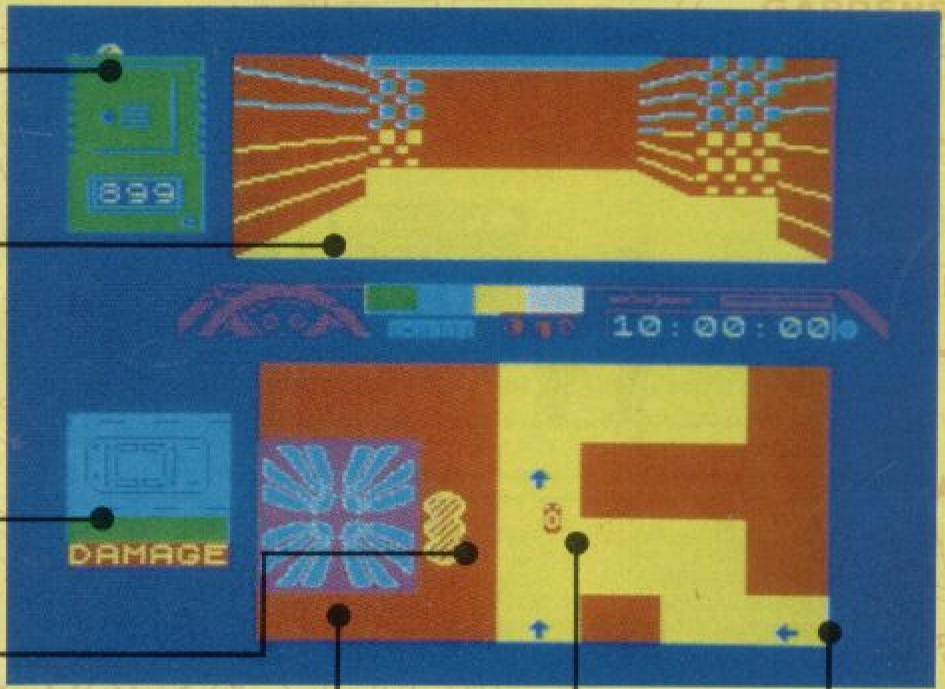
LATER... IN PARIS

Listen out for the blip, blip, blip of your radio tracker — it's the only way of keeping tabs on May Day when she's out of sight. Also, keep an eye on her altitude — but don't panic 'cos there's something up with gravity in the game, she comes down so slowly.

Welcome to Paris. This is the view out of your windscreen. What d'you mean it looks more like a 3D maze than the centre of culture and sophistication you visited on your hols.

Watch out for the damage done to the car. OK, so it doesn't belong to you, but you're never going to catch up with May Day if you're in a write-off. And that'll mean starting from the beginning again.

Don't expect to beat May Day to the ground first time round. Even if you think you've got it sussed the wind can change and take her off course at the last minute. And you're not helped by the fact that your car is virtually uncontrollable!



Watch out for the most obvious bug in this game — when your car gets completely stuck in the walls it looks rather like it's having a fit.

The aerial view of Paris shows you all the streets around the Eiffel Tower leading to May Day's possible drop points. If you meet her at one of them you'll be given a code to take onto the next two missions.

Here's the taxi you've commandeered. In the film it ends up chopped in half but it's still easier to drive than this one. You can only control speed not direction so you inevitably end up bouncing off the walls like a frenzied squash ball.

If you go down the one way streets in the wrong direction you can expect a visit from the local gendarmerie. Don't panic though 'cos they're about as scary as Inspector Clousseau! You can always blast them right off the road.

... Bond raced hell for leather to the top of the Eiffel Tower. His shots clanged against the iron framework just missing his informant's assassin. He was closing. The killer was just within his reach... and then was gone over the side. His fingers flailed as he lunged out to grab hold. It was then he saw the parachute open. His only chance now was to get to the bottom of the tower and take a taxi to give chase...

MEANWHILE... SAN FRANCISCO CITY HALL... WEDNESDAY

OBJECT LESSON

Here are just some of the objects you'll find in the cut-away portion of City Hall. There are plenty more but you'll have to discover those for yourself.

Your gun is perhaps the most vital piece of equipment as it gives you access to all locked doors — provided you have the bullets.

Without bullets your gun ain't much cop. Fortunately, there's a liberal supply scattered all over the building but remember you've got to use them two at a time, so be sparing.

You'll soon be able to distinguish between door and cupboard keys like this one. Again they're colour-coded but they'll only open filing cabinets so you can search inside them.

There are door keys scattered all over the building in a variety of different colours to match the doors they'll open.

The colour-coded security passes will also open doors but you can't use them on more than one door. Luckily, once you've opened a door it stays open.

Here's the fire hose you'll need to drop down the lift shaft to pull Stacy out. It's heavy so you may find you have to drop some items if you can't pick it up at first.

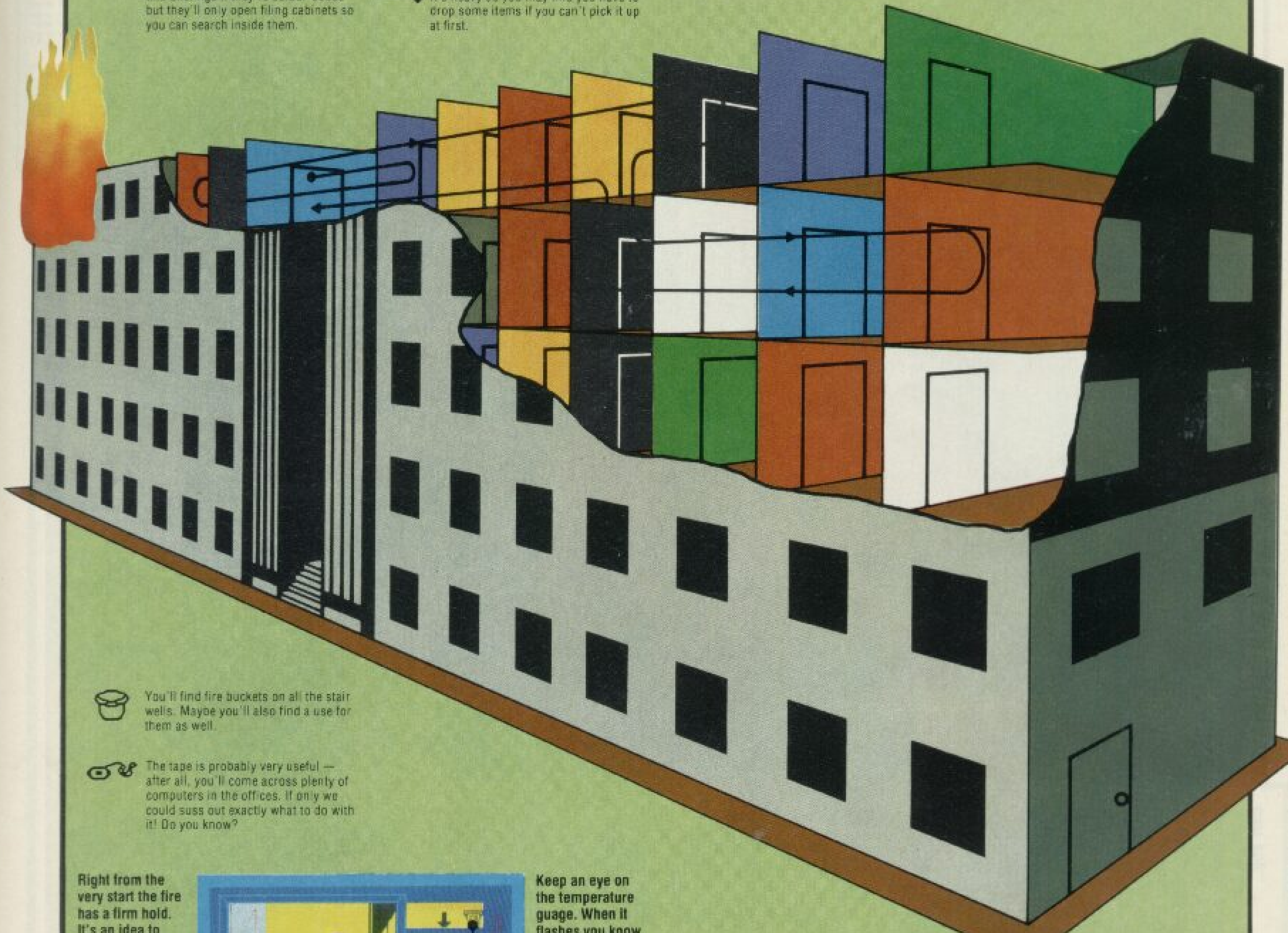
You'll find that mary of the doors in City Hall are locked. If you've found the colour-coded security pass or key, then you're OK. Otherwise you'll have to shoot your way through. It always takes two shots and bullets are in short supply.



For picking up you'll need to master the double duck-shoot. The top one shows you what's in a room and what you're lugging around with you. The bottom one lets you select the appropriate course of action.

Bond is back and in a totally different disguise from the one he wears down the mine in the final game. Here, he looks and sounds as though he's wearing stilettos on concrete. Watch out for one nice touch — he mops his brow when the heat's on.

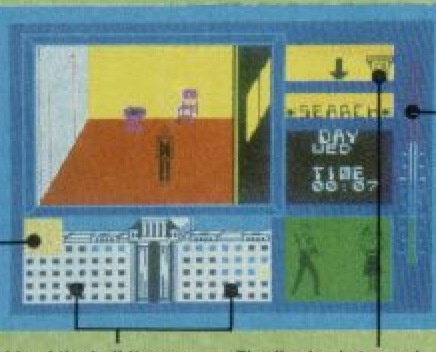
When you first search a room using the bottom duck-shoot you won't be shown everything that's in it. Sometimes, you'll have to start jemmying open the furniture before all is revealed.



You'll find fire buckets on all the stair wells. Maybe you'll also find a use for them as well.

The tape is probably very useful — after all, you'll come across plenty of computers in the offices. If only we could suss out exactly what to do with it! Do you know?

Right from the very start the fire has a firm hold. It's an idea to suss out the rooms on the left as quickly as possible, 'cos they're soon too flamin' hot. If you enter a room right next to the fire, be quick — it can jump and frazzle you.

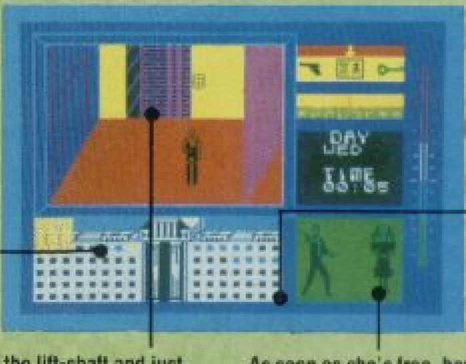


Keep an eye on the temperature guage. When it flashes you know you've not only had your chips but you're just about to join them in the frying pan. The closer you get to the flames, the slower your actions become.

The stairs on either side of the building are your only means of moving between floors. It's often worthwhile nipping down a couple of flights if you need some bullets quickly and then belting back up again.

The fire buckets can be found on all the stair landings. You can have a go at pouring water on the fire but it didn't seem to do much good when we tried it.

Watch your progress in the windows of City Hall. Your present location is shown by the yellow square and the rooms you've been in are coloured in blue.



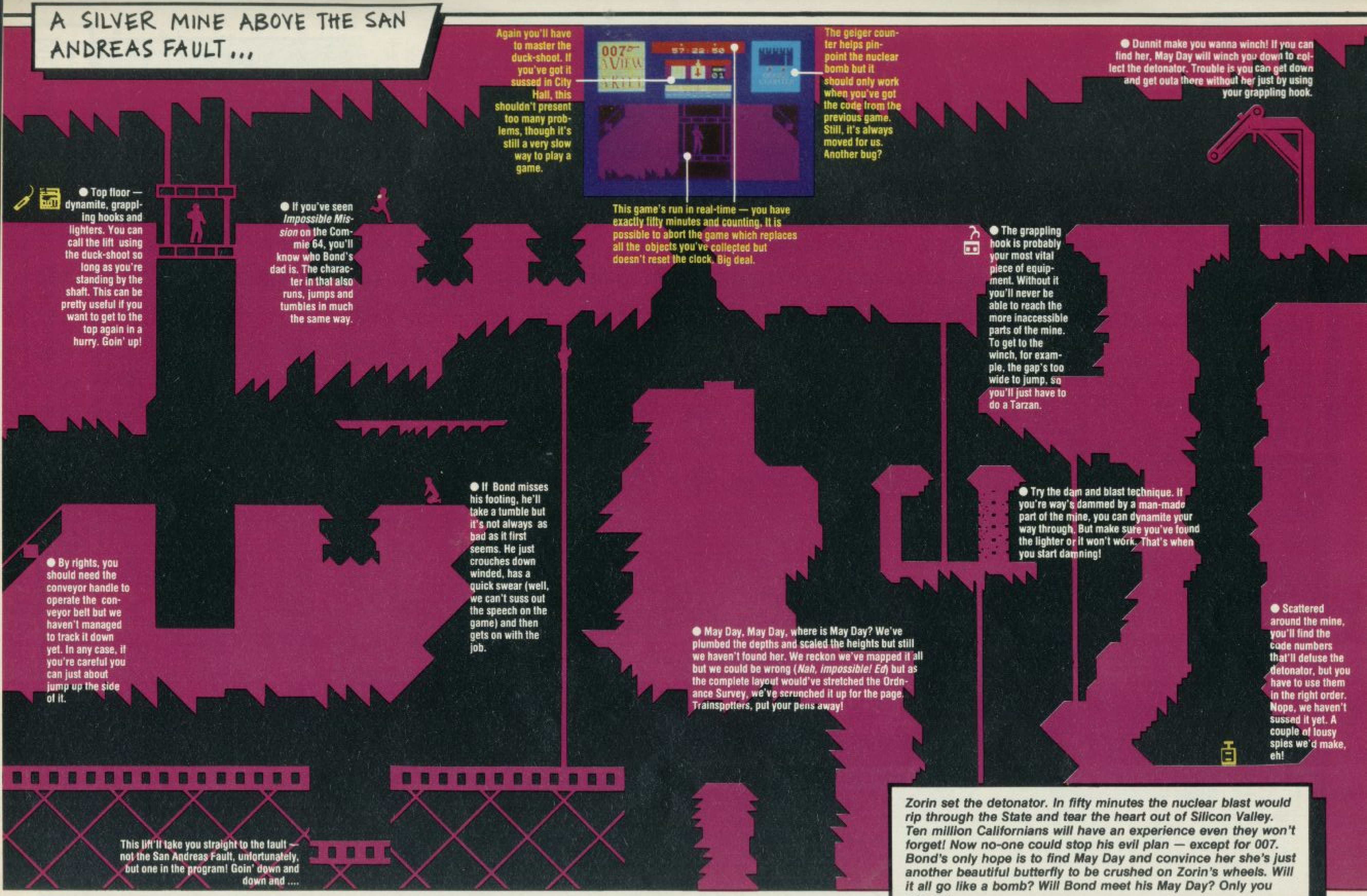
Rescuing Stacy's the easy bit. Getting both of you out is a touch more tricky. You've got to find a complete code that'll unlock the security door on the ground floor on the right.

Even trapped inside the lift, Bond and Stacy could smell the petrol. And then they heard the whoosh and felt the heat as the fire was lit and the flames sucked like a hot tornado down the shaft. The metal lift turned into an instant microwave. Bond was shaken, but not stirred. He pushed open the hatch at the top and climbed out. His only thought was to save Stacy before the cable snapped and the lift plunged to oblivion...

Stacy is stuck down the lift-shaft and just like in the film, you'll need the fire hose to get her out. Follow the route we've mapped out for you on City Hall.

As soon as she's free, her piccy appears next to Bond's. She does look rather more like Olive Oyl than Tanya Roberts! Use the Stay and Follow commands on the duck-shoot to tell her what to do. She's already got you into one fine mess!

A SILVER MINE ABOVE THE SAN ANDREAS FAULT...



Zorin set the detonator. In fifty minutes the nuclear blast would rip through the State and tear the heart out of Silicon Valley. Ten million Californians will have an experience even they won't forget! Now no-one could stop his evil plan — except for 007. Bond's only hope is to find May Day and convince her she's just another beautiful butterfly to be crushed on Zorin's wheels. Will it all go like a bomb? Will Bond meet his May Day? Only you can say...

HACKER'S GUIDE

Join the spy who came in from the code — *Chris Wood* has been doing a bit of espionage on *A View To A Kill*.

I don't like saying it, but this game ought to be re-titled *A View To A Quick Killing*. Two out of the three games on the tape are the most bug-ridden I've seen on the market for a long time. I realise Domark was in a tearing hurry to release the programs but putting them out like this may have cost them more than waiting a month or so to take out some of the bugs.

One of best things is the intro program. It has a nicely animated, if somewhat emaciated, James Bond who crouches and shoots at you and as the blood pours down the screen, the shutter scrolls backwards and forwards and smoothly obliterates Bond. It's all done by five quite complex and fast routines. One prints the shutter invisibly on the screen and then slowly colours it in. This isn't as simple as it sounds because the screen's printed from top to bottom, though LDIR would have done the trick just as well. Then the shutter tracks left across the screen as Bond walks on. This is done by scrolling a *huge* sprite nearly one and a half times the size of the screen (forty-seven character squares wide), half a character square at a time, and printing a smaller Bond sprite on top of it.

Unfortunately, the programmers spent too much time on the title page and then rushed the rest. Take the first game, for example, your car, goes as fast backwards as forward and has a habit of getting stuck in walls which it happily drives into but then can't drive out of. If you finish this game — and I couldn't — you're given a code word to be entered when you play the second one. For those of you who find this game as difficult as I do. the code word is ORS21.

I couldn't spot any bugs in the next game, City Hall. Here, Bond is put on-screen in the same way as Wally and his mates in *Life Of Wally*, but the attribute problems are so bad you'd hardly spot this. When you finish you're given a code for the third game that contains info relating to the useful objects you have and the time you took. Now, I couldn't finish this either, but I found that QQQQQ gives you maximum time and the geiger counter works in the next game.

The third program set down the mine should be retitled *A Day In The Life Of A Stunt Pope* with all the running, jumping, somersaulting and kissing of tarmac that goes on when you fall too far. This program also has a few major bugs — when your time limit reaches zero and you die, the time is not reset, for example. I've corrected that bug as you'll see later.

Apart from these bugs this is technically the most polished of the three games. The routine that scrolls the screen around is certainly the most interesting. Many of you will have seen games that involve scrolling screens where the central character flickers when the screen is scrolled. This is because the character is erased, the screen is scrolled and the character is put back. The time taken to scroll the screen means that the character is off the screen for a few tenths of a second — quite long enough to cause a bad flicker. Not this game!

It has an intelligent screen scrolling routine that works down the screen, scrolling one pixel line at a time until it gets to the position of the Bond character who's always in the centre of the screen. It then scrolls the small part of the line that the character is in back the opposite way, so that he is always in the middle and doesn't flicker. This continues all the way down until it gets to the bottom of the character when it just scrolls the screen beneath his feet normally. By doing it this way, Bond is only ever off centre for such a short time that you don't notice and he always appears rock steady.

In the final game POKE 30010,0 allows you to try as many different codes as you like instead of NEWing after three incorrect entries, if you want to experiment. To cure the bug I mentioned earlier, merge the Basic in the original tradition of hackers and add these commands to line 30 before the RANDOMIZE USR command:

```
POKE 28032,255:POKE
28087,8:POKE 29243,8:POKE
30543,8
```

This will send you back to the password input routine when you die or abort from a game, so resetting your time depending on what you type in as your pass code.

The final program is called End — they got something right at last! To get through to it, you'll need a patriotic password that has something to do with Her Royal Majesty Queen Elizabeth!

the 3D 3

In last month's YS, Mike Leaman presented a 3D graphics creator in machine code. He follows up this month with three extras that turn the program into a complete 3D system. There's a turbo-charger for extra smoothness, an on-screen 3D sprite designer plus the promised conversion to YS MegaBasic. Well, they say that all good things come in threes!

● 3D Turbo Charger

I hope that by now you've got the listing from last month's issue up and running and that you've started to create moving graphics in three dimensions. The only problem is that they're a little flickery. What d'you mean, you noticed? This was a result of trying to keep last month's code to the absolute minimum so that you wouldn't have reams and reams of listing to type in. Now though you can solve the problem with this small program. The method I've used is a trick that you'll find on many commercial pieces of software though it has the disadvantage of taking up another 6K of memory. Don't panic — this doesn't mean that you'll have to start bashing in another 6K of code — just tap in the short Basic program below.

Done that? Right, now save it to tape and run it. It'll now load last month's code, so once you've typed RUN, load the 3D Daze program into your Speccy. The program will now alter the code to include the new routines and then it resaves the turbo-charged code for you.

There's no difference in the way the new code functions from the old except that it makes for smoother graphics. Plus there's a bonus of a new machine code subroutine that lets you move objects without having to erase and then reprint them. The routine starts at 63945 and you POKE the co-ordinates of the object you want to move into the locations that appeared last month. You can now specify the direction in which the sprite is to move by POKEing the X, Y and Z increments into locations 63997, 63998 and 63999 respectively.

Now it's an idea to check that the new routine's working using last month's demo program. Remember though to alter the CLEAR and LOAD commands at the beginning of the program to CLEAR 57750 and LOAD "TCODE"CODE. A last plus point is that this new routine lets you use the whole screen as background but that does mean that when you use CLEAR to reserve the memory for your backdrop you'll have to reserve 6K instead of 2K. The reason for this is that another area of memory is used for printing on, instead of the normal screen. When you print, erase or move a sprite all the printing is done in this new area of memory, and that means that the entire 6K of memory is copied to the real screen, updating the whole screen at once.

```
  20 CLEAR 57750
  25 LOAD *"m";1;"CODE"CODE
  30 FOR a=63945 TO 63999
  40 READ b: POKE a,b: NEXT a
  50 POKE 64002,228: POKE 64003,
249
  60 POKE 64013,226: POKE 64429,
64
  70 POKE 64072,156: POKE 64073,
225
  80 POKE 64432,24
  90 POKE 64629,201
  95 POKE 64635,155: POKE 64636,
225
 100 SAVE *"m";1;"TCODE"CODE 639
45,1423
9000 DATA 205,34,252,58,254,249,
132,50,125,252,58,253,249,133,50
,126,252,58,255
9010 DATA 249,130,50,128,252,195
,233,251,42,123,252,17,156,225,1
,0,24,237,176,201,33
9020 DATA 156,225,17,0,64,1,0,24
,237,176,24,47,69,69,69
```

The 3D turbo-charger will make your sprites completely flicker-free. But be warned, it'll use another 6K of memory.

● Convert to *YS MegaBasic!*

Now for everyone with *YS MegaBasic*, here is the conversion program that'll turn it into *3D YS MegaBasic.* Are there no limits to its versatility, I hear you cry but I'm far too modest to reply!

All you have to do is type in the 3D Daze program from last month then type in the conversion program, save it and run it. When the message Loading CODE comes up on screen, play the 3D Daze code into your Speccy and then when you receive the Loading MegaBasic message, just play your *YS MegaBasic* tape. The program will then alter and link the two pieces of code and when it's finished it'll resave the new code. You'll now have a new version of *MegaBasic* that's slightly longer and will accept a number of new commands. But because it's longer you'll need a new loader for it — something like this should do the trick:

10 CLEAR 43560:LOAD "3D MB"CODE:RUN USR 56100

Let me just run through how the conversion program works. First off, the 3D Daze code is loaded into memory not at its normal location but lower down below the *MegaBasic* area. Even though the code's been loaded out of the way of *MegaBasic* it still won't work as some of the machine code instructions refer to the higher area of memory. This means that we have to alter these instructions to point to the new area of memory. Once this is done, *MegaBasic* is loaded and a small piece of code that interfaces the 3D Daze code to *MegaBasic* is POKEd into memory. Finally, *MegaBasic* is altered so that it'll recognise the new commands and then it's saved. Phew!

You can use the 3D Sprite Designer opposite to create 3D sprites for *3D MegaBasic* but the code file that the designer produced must be loaded at 44678.

Command Performance

You'll find that your new *3D MegaBasic* has the following four new commands:

WRITE_x,y,z,c Prints the sprite with code 'c' at position x,y,z

RUB_x,y,z,c Removes the character that's at position x,y,z from the display

BACKD_add This saves the middle third of the screen at memory address 'add'

LCLEAR This command clears the display list and should be used at the beginning of every program that uses 3D graphics

```
  10 CLEAR 43560
  15 PRINT "Loading CODE......"
  20 LOAD "CODE"CODE 43631
```

Lines 10-20 Load in the 3D code from tape into a reserved area of memory

```
  25 PRINT "Relocating......Plea
se wait"
  30 FOR z=1 TO 45
  40 READ a
  45 LET a=a+43631
  50 LET p=(PEEK a+256*PEEK (a+1
))-20369
  60 POKE a,p-256*INT (p/256): P
OKE a+1,INT (p/256)
  70 NEXT z
```

Lines 25-70 Make sure all the addresses in the code point to the new locations

```
  72 PRINT "Loading MegaBasic"
  73 LOAD ""CODE
```

Lines 72-73 Load in the *MegaBasic* code

```
  80 PRINT "Installing MegaBasic
binding"
  90 FOR a=43562 TO 43626
 100 READ b: POKE a,b: NEXT a
```

Lines 80-100 POKE in the code for the *MegaBasic* binding

```
 110 PRINT "Patching MegaBasic"
 120 LET p=52851
 130 FOR z=1 TO 4
 140 READ a$: FOR y=1 TO LEN (a$
)-1
 150 POKE p,CODE a$(y): LET p=p+
1: NEXT y
 160 POKE p,CODE a$(LEN a$)+128:
 LET p=p+1
 170 NEXT z
 180 POKE p,255
 190 FOR z=48906 TO 48913
 200 READ b: POKE z,b: NEXT z
```

Lines 110-200 These lines tell *MegaBasic* that the new commands exist

```
 210 PRINT "Saving MegaBasic"
 220 SAVE "3D MB"CODE 43562,2180
7
```

Lines 210-220 Save the up-dated copy of *MegaBasic* with the new code installed

```
8000 DATA 2,6,15,38,61,108,123,1
27,134,144,151,162,166,169,174
8010 DATA 185,188,199,219,234,25
3,257,264,356,388,404,425,438,49
1,495
8020 DATA 500,506,515,533,540,54
3,548,552,556,595,599,618,622,62
6,632
8990 DATA 205,145,172,195,155,17
0
9000 DATA 205,104,191,121,50,237
,172,231,205,104,191,121,50,236,
172,231,205,104,191,121,50,239,1
72,231,205
9010 DATA 104,191,121,50,238,172
,201,205,48,170,195,88,172,205,4
8,170,195,42,170,205,104,191
9020 DATA 237,67,234,172,195,22,
172,175,50,46,173,201
9030 DATA "WRITE","RUB","BACKD",
"LCLEAR"
9040 DATA 80,170,86,170,92,170,1
02,170
```

Lines 8000-9040 Data for relocating, altering and installing *3D MegaBasic*

Here's the program that'll turn your 'ordinary' *YS MegaBasic* into 3D *YS MegaBasic* for all round power!

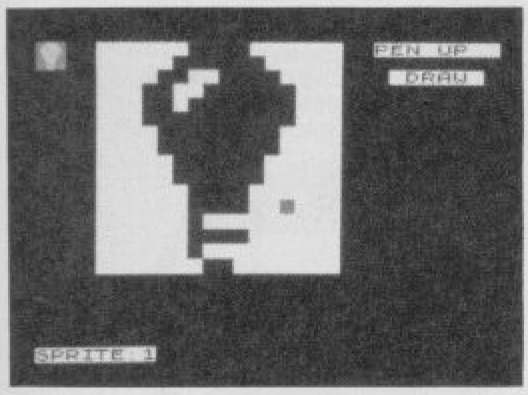
3D Sprite Designer

If you're having problems designing sprites to use with the 3D Daze program, here's the answer — an easy to use sprite designer.

So, how does the program work? Well, when you run it, you're first asked if you want to load an old sprite file — type 'y' or 'n' accordingly. There's then a short delay before you're greeted with the main screen where you'll be creating your sprites.

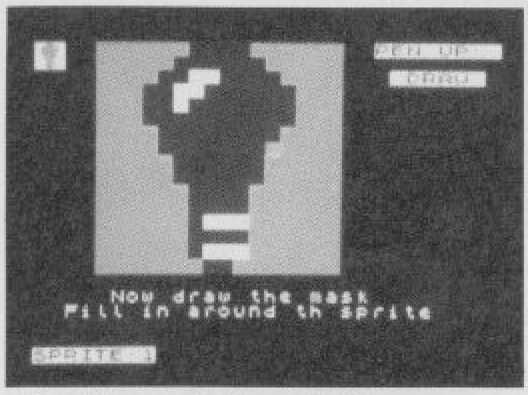
After you've created all the sprites you want, press 'f' to save the sprite data. It's saved as a code file so here's the procedure for loading the data for use in your own programs. Load in the machine code from last month or the Turbo code from this month, then load in the sprite data with a line such as:

LOAD "sprites"CODE



This is the main screen where you'll create your sprites. You'll notice that it's not exactly the same as the finished version but an early, less polished version we used for screen shots. Still, the idea's basically the same.

First, draw the shape of your sprite on the grid in the centre — for those of you with black and white sets, the image is in blue! You can see how things are going in the small box at the top left. When you're happy with your creation, save the shape by selecting the 's' option.



You'll now be taken onto the screen that lets you draw the mask for your sprite. The cursor's now in red and you should go round your sprite filling in the areas where you want the background to show through when your sprite's plotted on the screen. Once that's done, press 'm' to save the mask.



You can see here how your 3D sprites look either on their own or placed against a background. Whose bright idea was it to design light-bulbs, eh?

```
   1 BORDER 1: CLEAR 60000: GO T
O 1000
  10 LET Q=1: LET m=0: LET x=4:
LET y=0: LET d=0
```

Lines 10 Initialises some of the variables

```
  25 GO SUB 8000
  26 LET p=1: PRINT AT 6,21;"IMA
GE DATA": LET Z=Q: GO SUB 8800:
LET ST=16384-4*(Q-1): LET Z=Q: G
O SUB 8900
  27 GO SUB 7000
  28 PRINT AT 4,22;"SPRITE:";Q
  30 PRINT AT y,x; PAPER 8; INK
5; FLASH 1;" "
  40 LET x1=x: LET y1=y
```

Lines 25 Prints the sprite designer grid

```
  50 LET z$=INKEY$
  60 LET x=x+(z$="d")-(z$="a")+(
z$="c")+(z$="e")-(z$="z")-(z$="q
")
  70 LET y=y+(z$="x")-(z$="w")+(
z$="z")+(z$="c")-(z$="q")-(z$="e
")
  80 IF x=3 THEN  LET x=19: GO T
O 90
  85 IF x=20 THEN  LET x=4
  90 LET y=y+16*((y=-1)-(y=16))
  93 IF z$="K" THEN  GO SUB 4000
  94 IF z$="s" OR z$="S" THEN  G
O SUB 2000
  95 IF z$=" " THEN  LET d=NOT d
: GO SUB 7000
  96 IF z$="M" OR z$="m" THEN  G
O SUB 5000
  97 IF z$="p" THEN  LET m=NOT m
: GO SUB 7000
  98 IF z$="g" OR z$="G" THEN  G
O SUB 6000: GO TO 26
  99 IF z$="f" THEN  RETURN
 100 IF z$="s" THEN  GO SUB 9000
 110 IF x1=x AND y1=y THEN  GO T
O 30
 115 IF NOT m THEN  BEEP .01,1:
PRINT AT y1,x1; PAPER 8; FLASH 0
;" ": GO TO 30
```

Lines 50-100 Read the keyboard

```
 120 IF d THEN  PRINT  PAPER p;A
T y1,x1;" ": PLOT  INK 7;x1-4,17
5-y1: GO TO 30
 130 PRINT AT y1,x1;" ": PLOT  I
NK 7; INVERSE 1;x1-4,175-y1: GO
TO 30
```

Lines 120-130 Print the cursor

```
1000 CLS : PRINT "LOAD SPRITE FI
LE (Y/N)"
1010 LET a$=INKEY$: IF a$="" THE
N  GO TO 1010
1017 LET Pointer=65047
1020 IF a$="n" THEN  FOR A=65047
 TO USR "A": POKE A,0: NEXT A: G
O TO 1100
1030 INPUT "FILENAME:"; LINE n$
1040 PRINT ''"SEARCHING for ";n$
1050 LOAD n$CODE
1100 GO SUB 10
```

Lines 1000-1100 Check to see if a sprite file is to be loaded.

```
1110 CLS : PRINT "'S' TO SAVE SP
RITE OR 'R' TO RUN"
1120 LET a$=INKEY$: IF a$="" THE
N  GO TO 1120
1130 IF a$="r" THEN  RUN
1140 INPUT "FILENAME:"; LINE N$
1150 CLS : PRINT "SAVING ";N$
1160 SAVE n$CODE 65047,320
1170 PRINT '"VERIFYING"
1180 VERIFY n$CODE
1190 PRINT '"FILE IS OK!"''"'R'
TO RUN , 'S' TO EDIT SPRITES"
1200 LET A$=INKEY$: IF A$="" THE
N  GO TO 1200
1210 IF A$="r" THEN  RUN
1220 GO TO 1100
```

Lines 110-1220 Save sprite file and verify the subroutine, if necessary.

```
2000 GO SUB 6000: GO SUB 3000
2010 PRINT AT 0,0; PAPER 2; INK
7;"  "'"  "
2020 LET st=20672: LET z=q: GO S
UB 8900
2040 LET p=2: PRINT AT 6,21;"MAS
K DATA  ": RETURN
3000 LET pointer=65047+64*(q-1):
 GO TO 9000
```

Lines 2000-2040 This is a subroutine for saving the sprite on the grid as a particular sprite in memory.

```
4000 FOR z=0 TO 15: PRINT AT z,4
; BRIGHT 8; PAPER 6;"
     ": NEXT z
4010 PRINT AT 0,0; PAPER 2; INK
7;"  "'"  ": RETURN
```

Lines 4000-4010 Clear the sprite designer grid

```
5000 LET p=1: PRINT AT 6,21;"IMA
GE DATA": LET pointer=65079+64*(
q-1): GO TO 9000
```

Line 5000 Saves the image on the desing grid as a mask.

```
6000 PRINT AT 17,5;"SELECT SPRIT
E (1-5)"
6010 LET A$=INKEY$: IF A$="" THE
N  GO TO 6010
6020 IF A$>"5" OR A$<"1" THEN  G
O TO 6010
6030 LET Q=VAL A$: PRINT  PAPER
0;AT 17,5;"                    ":
 RETURN
```

Lines 6000-6030 Fetch the sprite you want from memory and display it on the grid.

```
7000 PRINT AT 0,22;"PEN ";("DOWN
" AND m);("UP   " AND NOT m)
7010 PRINT AT 2,23;(" DRAW " AND
 d);("UNDRAW" AND NOT d)
7020 RETURN
```

Lines 7000-7020 Flip the pen mode either up or down

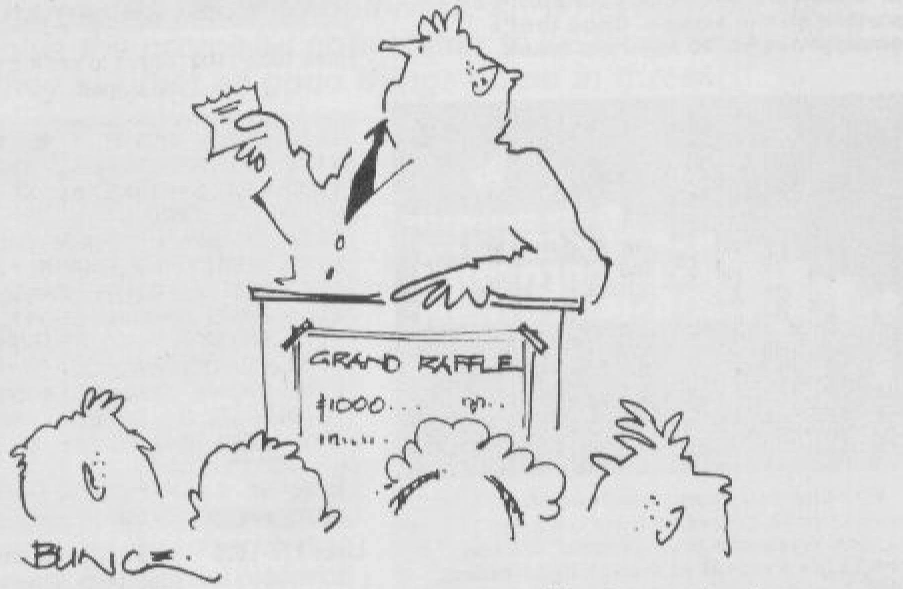
```
8000 BORDER 0: PAPER 0: CLS
8005 PAPER 6: LET f=1
8007 PRINT  PAPER 0;"    ";
8010 FOR a=1 TO 16
```

```
8020 FOR b=1 TO 16: PRINT  BRIGH
T f;" ";: LET f=NOT f: NEXT b: P
RINT  PAPER 0;'"      ";: LET f=NO
T f
8030 NEXT a
8035 INK 1: BRIGHT 8
8040 PRINT AT 0,0; INK 7; PAPER
2;"  "'"  "
8045 PRINT AT 21,0;"1    2    3
4    5 ";
8050 FOR a=1 TO 5: PRINT AT 10+a
,23;"q w e \!/ a-+-d /!\ z x c"(
(a*5)-4 TO a*5): NEXT a
8060 FOR Z=1 TO 5: LET ST=20672:
 GO SUB 8900: NEXT Z: RETURN
8800 LET Pz=65047+64*(Z-1)
8810 FOR W=0 TO 15
8820 PRINT AT W,4;: LET U=PEEK P
z: GO SUB 8850
8830 LET U=PEEK (Pz+1): GO SUB 8
850: LET Pz=Pz+2: NEXT W
8840 RETURN
8850 FOR L=0 TO 7
8860 IF U*2>255 THEN  PRINT  PAP
ER 1; BRIGHT 8;" ";: LET U=(U*2)
-256: GO TO 8880
8870 PRINT  PAPER 6; BRIGHT 8;"
";
8875 LET U=U*2
8880 NEXT L: RETURN
8900 LET Pz=65047+64*(Z-1)
8910 LET P1=ST+4*(Z-1)
8920 FOR W=0 TO 7
8930 POKE P1+256*W,PEEK (Pz+2*W)
: POKE P1+1+256*W,PEEK (Pz+1+2*W
)
8940 POKE P1+256*W+32,PEEK (16+P
z+2*W): POKE P1+33+256*W,PEEK (P
z+17+2*W)
8950 NEXT W: RETURN
```

Lines 8000-8880 Set up the screen subroutine

```
9000 LET s=16384: GO SUB 9100
9020 LET s=16416
9100 FOR a=0 TO 7
9110 POKE pointer,PEEK (s+a*256)
: POKE pointer+1,PEEK ((s+1)+a*2
56): LET pointer=pointer+2
9115 NEXT a
9120 RETURN
```

Lines 9000-9120 This is the main subroutine for saving either sprite or mask data to memory



And the winner of the firms grand raffle, picked at random by computer is... the Spectrum + in accounts !

This program lets you create your own professional 3D sprites straight onto the screen. 3D or not 3D, that is the pun we've tried to avoid up till now!

Key Questions

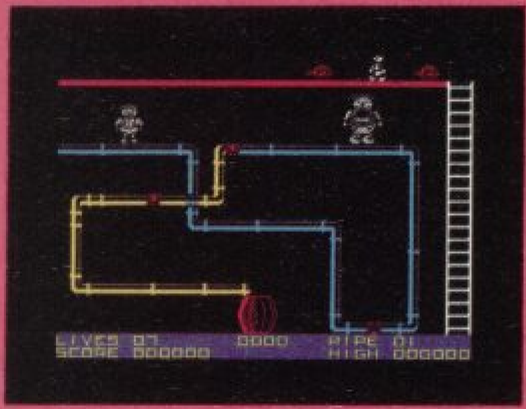
So, how do you draw on the screen? Well, the main keys you'll need are shown on screen on your version but there are a number of other useful keys listed below:

K	Clears the display
S	Saves the image on the grid as a particular sprite
M	Saves the image on the grid as a mask
SPACE	Toggles the drawing state
P	Switches the pen up or down
G	Lets you select one of the five sprites and display it on the grid so you can edit it.
F	Press this when you've finished creating your sprites

JOYSTICK JURY

Our three-ring circus of* Roger Willis, Ross Holman *and* Dave Nicholls *is back in town. Watch 'em put all the latest arcade games through the hoops — and have a laugh at the clowning around.

What's the score? Well, the marks out of five at the end of each review is a sort of shorthand way of summing up what each reviewer thought of the game. But will it be a commercial success? For that you'll have to check out the HIT and MISS system. Simple, eh?



PIPELINE/S.O.S.

Viper/£7.95

Ross: You get two games for the price of one here ... and both are pretty good!

Pipeline is the better game, so we'll deal with that one first. Featuring some very colourful graphics and a fairly original idea (at least on the Speccy), you have to keep a pipeline completely free of leaks so that the water flows through to fill a tank at the bottom of the screen. Trouble is that gremlins are about and soon start causing all sorts of problems by making holes all over the pipeline. So, guiding your spanner-wielding workman around the pipeline, you start making repairs and bashing said gremlins on the head.

The graphics are very large, but that doesn't affect their smooth animation ... very convincing! And if you want further proof that this isn't such a bad package, turn the tape over and load up *S.O.S.* OK, so the idea's not that original (we've all seen *Lunar Lander* clones before, haven't we?) but it's not a bad game.

Overall, though *S.O.S.* isn't the best thing since sliced bread, the two games together make up a pretty decent package that's definitely worth the money. **3/5** **HIT**

Dave: Original, attractive and horribly addictive ... indeed, it's enough to put you off running a bath for ages! Go out and buy it and have barrels of fun. **4/5** **HIT**

Roger: Great stuff. A program that all plumbers should play before they come around to your house and turn it into an indoor swimming pool! *S.O.S.* isn't bad either. Go-getters should go get it! **4/5** **HIT**

ROGER'S RAVE OF THE MONTH

TAPPER

US Gold/£6.95

Roger: Five different frothy, gargling, screens of panic-stricken swilling have to be attacked, as you desperately try to get the bevvies in for different classes of rowdy customer. Four bars, catering for Cowboys, Jocks, Punks and Aliens have to be served, but overall behaviour suggests they must all be football supporters ...

Thirsty yobboes constantly shuffle up the bars towards you and can be only kept at bay by swift delivery of glasses of the amber nectar. Serve one too many and you get lumbered with a smashed glass. Serve one too few and the irate punter, raving with thirst, sends you for a nasty nose-first trip down the bar. What's more, the wretches chuck their empty glasses at you, and these have to be deftly caught.

And if that ain't enough to put you off hostelry employment for life, there's another transitional screen in which lurks a bandit who shakes up some of the tinnies you're about to open — get a can overdosing on fizziness and you'll be wearing the contents ...

The graphics are splendid 3D-ish stuff and the action is blisteringly fast — *too* fast for poor little me using a keyboard. I got so tired that I just *had* to go and assault a different barman . 4/5 **HIT**

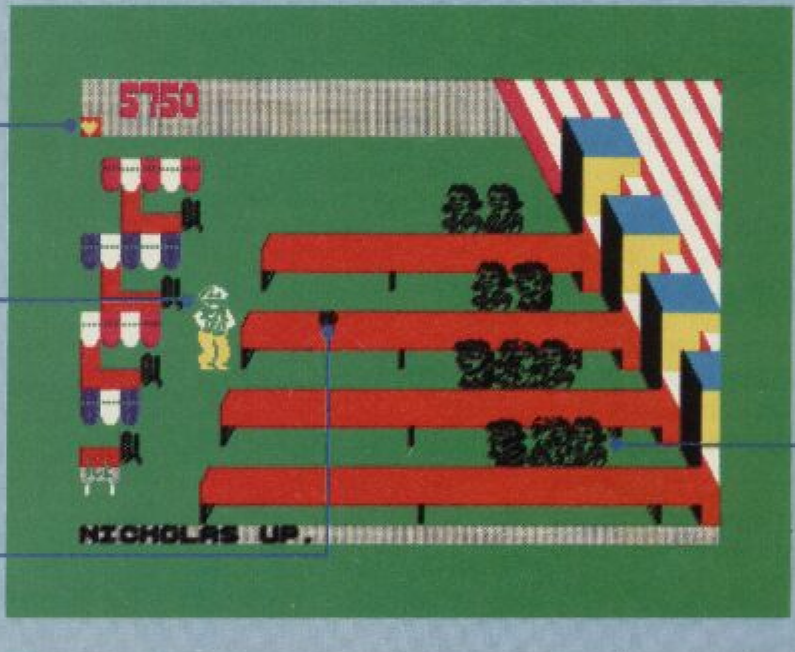
Ross: *Tapper*'s a simple little game, but things can get quite hectic and it's extremely addictive. The accompanying graphics and sound are pretty good, but if the dancing girl graphics are meant to attract customers, someone better think again! 4/5 **HIT**

Dave I like games that deal with subjects close to my heart — and that means *Tapper*'s got to be a winner. You'll need good co-ordination, though, so there's no slipping away for a quick half before the action starts! 4/5 **HIT**

Have a heart! Well, it's a life actually and they're very easy to lose. If you don't keep the patrons of your bar sozzled on Sarsaparilla, they'll pick you up and start mopping up the slops with you.

You'll never get bored in *Tapper* — you won't have the time. You'll be rushed off your feet for the whole game. I've noticed that no green crinkly drinking vouchers ever change hands at the Crazy Horse Saloon — now that's the type of bar I like!

One way of keeping the customers satisfied is to work systematically down the bars, throwing one or two pints of plonk (assuming there are punters waiting) and then moving on to the next. Only when things get really hairy will you need to change your routine.

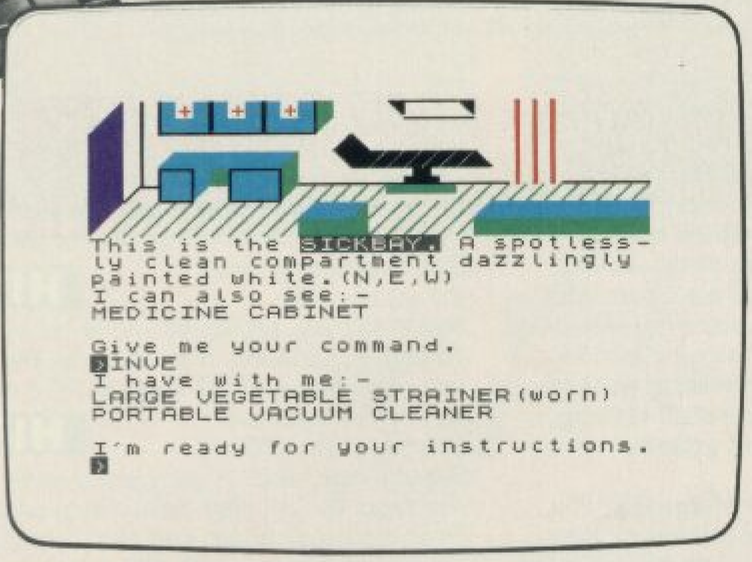


Now doggone it pardner, you better look after these cowgirls and cowboys, otherwise the west might just re-introduce lynching for the lazy bartender.

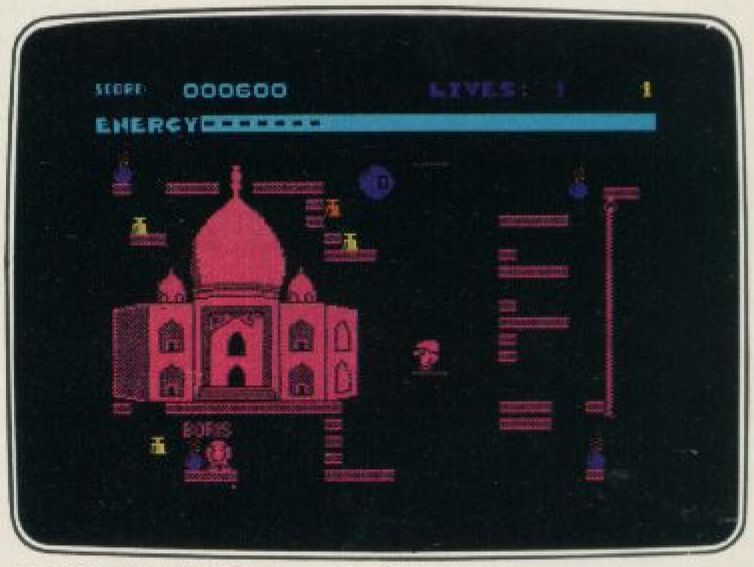
Some of the regulars return to the far end of the bar to sup their pints in peace. But watch out for when they've finished 'cos the empties come sliding back to you. If you miss one, you can wave farewell to another life.

Keep a careful eye on how many customers you've got on each bar. You might have a smashing time if you throw an extra glass but the clientele won't be too impressed. And that's goodbye to another life.

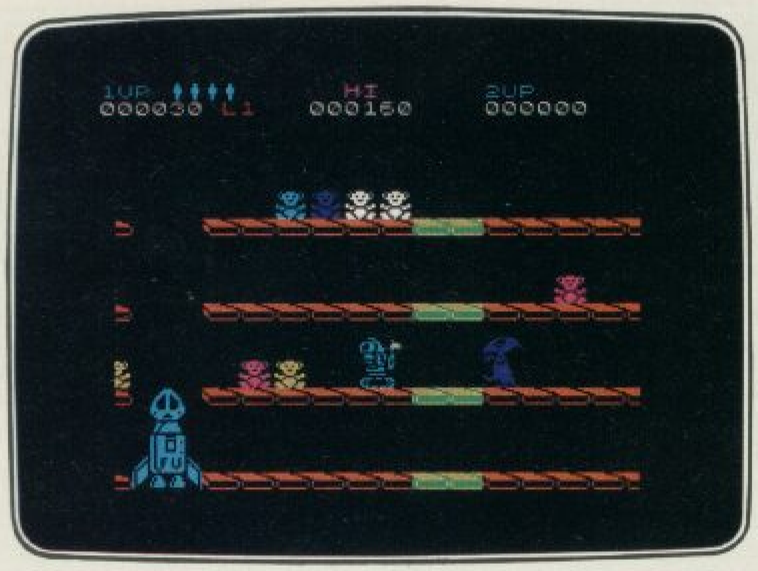
SILVER RANGE . . . Seeing is believing



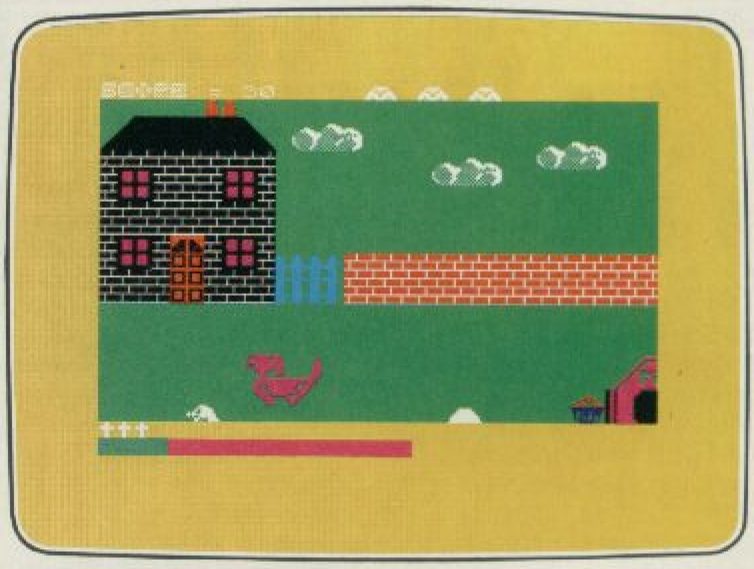
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JOYSTICK JURY



MATCH FISHING
Alligata/£6.95

Dave: The only time I remember doing anything that could be classed as 'fishing' was a rather wet couple of days on the South coast wondering if the bait on one end of the line was as bored as I was on the other! But based on my rather limited experiences, I'd have to say *Match Fishing* was a fairly faithful simulation ... unfortunately.

You can have up to eight players, each fishing a specific section of the river — each player is provided with information about the depth and state of the water and is asked to choose equipment. Now comes the exciting part ...

Just joking! The display changes, showing you all the players on-screen for the fish to turn up. If a fish happens along, a number flashes on the shore and you have to press the equivalent number on the keyboard. All exciting stuff ...

Alligata recommends that players should gather round the Speccy at a distance of one metre. I'd recommend a longer distance — perhaps a mile and a half. Check it out if fish are your things. **2/5** **MISS**

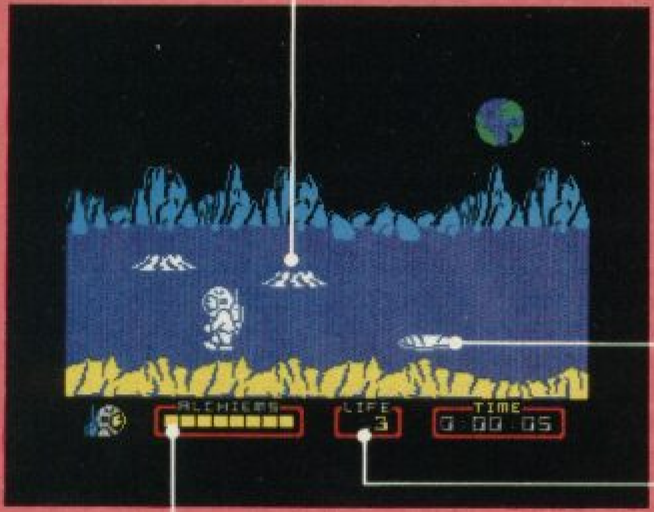
Roger: *Match Fishing* is probably the most boring game in the world — I can't think why it wasn't a leading contender for Firebird's *Don't Buy This.* Tackle this one if you dare! **1/5** **MISS**

Ross: You know the way fish look? — you know, bored to tears — well, that's how I looked after just five minutes with this game. **1/5** **MISS**

DAVE'S RAVE OF THE MONTH



This is a mole-hill — if you watch it closely, you may be lucky enough to see a moon-mole stick its head out for a couple of seconds. If you do, jump on it quickly as it'll enable you to transform into a mole during the rest of the proceedings.



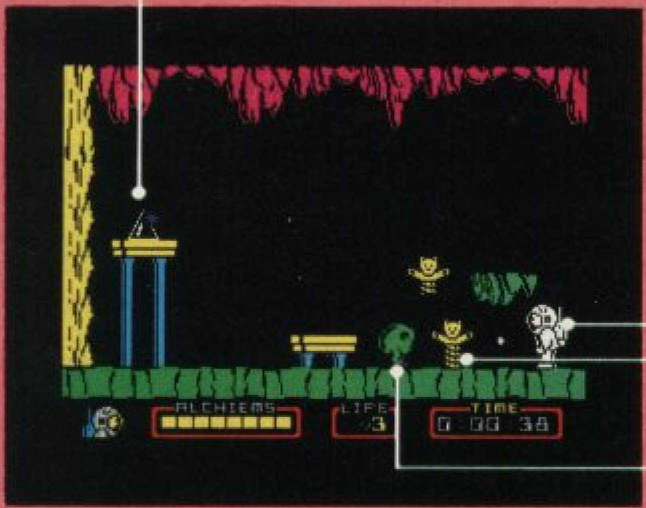
A mole-hole is the only way you're going to be able to get down into the underground world of Yesod. Down here you'll find all sorts of marauding meanies and bad-tempered baddies ... so watch out!

This is the heartbeat monitor — as you draw near to the end of your life the sine wave begins to slow down. A nice touch!

This is the Alchiem counter. Each time you find a piece of the Alchiem, a square is filled in.

Here we have it — the all-essential Alchiem. All you have to do now is collect the other seven Alchiems and then go in search of the monolith.

Dressed to kill, here's our hero wearing the trendiest space gear this side of Carnaby Street. Note the *tres chic* Xammo jet pack on his back — how else does your average space-person get around these days?



According to the instructions, this is a Spring Monster ... but it looks more like a Teddy Bear to me! S'shame it's not so friendly.

Watch out for this creature ... it's none too friendly, and won't take kindly to the normal way of dispatching with unwelcome meanies. If you bounce this one on the head, it'll bounce you all over the screen.

NODES OF YESOD
Odin Software/£9.95

Dave: Well, it must be said ... this game features the best music on the Spectrum this side of *Top Of The Pops (That's not saying much! Ed.)* And not only that, but the animation is up to the standard set by Ultimate, and the speech ... well, words fail!

OK, you've probably gathered by now that I like this one, so let's get down to the nitty-gritty of the actual game. First off, you're briefed by Commander Smith in an appalling German accent and then it's into the action. Your task is to make your way across the lunar surface, jumping on to a moon-mole as soon as it pops its head out of one of the craters. You then move underground in search of the eight Alchiems that go to make up the great master key.

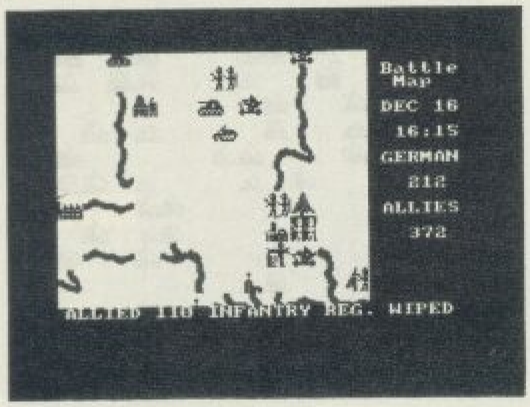
On your journey under the lunar surface watch out for all sorts of baddies, such as the Liver Birds, a big red fish, an alien pirate and a bouncing Teddy Bear. Of course, if you choose you can transform yourself into a mole and deal with your enemies in a most animalistic fashion. You can jump all over the place, but mind you don't fall too far or else you'll find your space-suit develops leaks in the most unpleasant of places and you'll lose a life.

The action is fast and furious throughout *Nodes of Yesod*, which is amazing when you consider the quality of the sprites and the flicker-free animation. The game really does pale into insignificance when you see it being played ... the way the spaceman bounces off the lunar surfaces is a joy to behold. Some programming person has gone to the most meticulous detail to make sure that everything is just right. This one gets a resounding yesod from me! **5/5** **HIT**

Ross: *Nodes of Yesod* may seem like a silly name, but then the game's got some nice humorous touches that make it very friendly. You only have to read the instructions — they're in rhyme — to know that someone's got a healthy sense of humour. **4/5** **HIT**

Roger: Overall, I'd have to say that it looks like an *Underwurlde* clone ... but then again, I loved *Underwurlde.* And I love this game too! **5/5** **HIT**

JOYSTICK JURY



THE BULGE

Lothlorien-Argus/£9.95

Dave: No, it's not a diet program, we're back in wargame land.

This one's based on the Battle of Antwerp which happened around the end of WWII. If you cast your mind back to Imagine's *Stonkers*, there are a lot of similarities — such as using the cursor to move troops around on-screen. Also like *Stonkers*, you're kept up to date by means of a ticker-tape display.

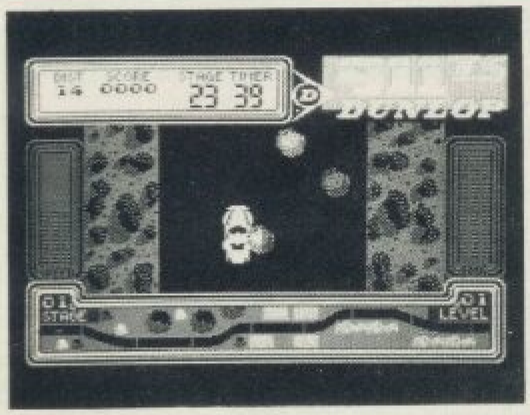
The actual playing area is about 12 times the size of the screen, so when your cursor gets near to the edge of the screen you scroll automatically into the next area. Screen graphics are OK, but nothing to write to Mum about in your letter from the Front.

The game can be played by two players, the Speccy taking the other side should you have to play on your own.

Strategically, *Bulge* is quite good, but I've got a feeling hardened wargamers may find the whole affair a bit easy. However, for the novice, *Bulge* is recommended. **3/5** MISS

Ross: On the whole, I find most wargames boring. Having said that, though, *The Bulge* should satisfy the death-dealing instincts of your average aspiring Montgomery ... it looks complicated enough anyway. **2/5** MISS

Roger: With a title like that I'm sure there's something obscene I could say ... but it might detract from what I thought was a very good wargame. Definitely one for the more violent of our readership. **4/5** MISS



911TS

Elite/£7.95

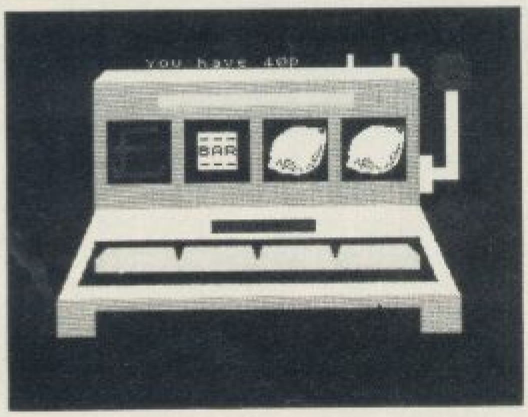
Roger: Stuck up past its hub-caps in blatant advertising for Dunlop tyres, including permanent on-screen logo and an opening 'choice' screen featuring four different types of competition rubber from the aforesaid corporate enterprise, this lump of software claims to transport us through the experience of driving an upmarket hairdresser's motor car through various rally sections in less-than-glorious 2D scrolling action. (If, as Elite's packaging blurb boldly states, the Porsche 911 is the "world's leading sports car" then I'm Sir Clive Sinclair. This is fortunately untrue, although we seem to share similar intelligence and cash flow problems ...)

Players also get a chance to 'buy' other go-faster goodies besides tyres, before attacking their first stage. There is, we quickly discover, no pretension to driving simulation. The game is nothing but a simplistic 'dodge-the-random-object' slice of kiddie-level arcadia.

Maybe I'd have been better off on Pirellis ... **2/5** MISS

Ross: Many moons ago, I typed in my first program into the 3.5K of the VIC 20 and ended up guiding a spaceship through a scrolling asteroid belt. *911 TS* is very similar, only this time you control a Porsche. Nuff said. **2/5** MISS

Dave: Elite seems to have caught on to Ultimate's trick of bringing out two games using the same techniques. Try imagining *Grand National* with Porsches instead of horses and you're halfway there. Pretty boring. **1/5** HIT



DON'T BUY THIS

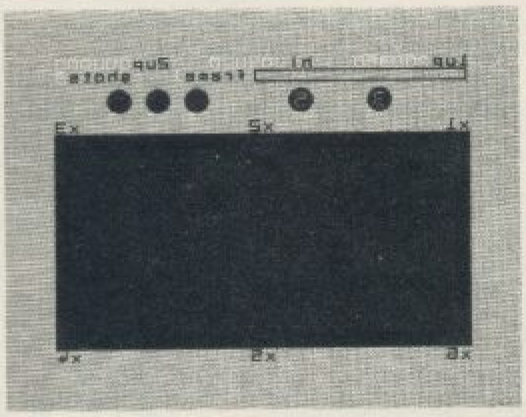
Firebird Software/£2.50

Dave: The games included on this tape are apparently the worst games submitted to Firebird for publication. Two of them star a puppy called Fido who has to flatten moles with his tail while avoiding birds flying overhead — both games are original and well worth a couple of minutes' attention. *Race Ace* is another 'also-ran', featuring a character-sized car moving around a single-screen plan view race track — there are two speeds: tediously slow or ridiculously fast! Moving on, there's *Weasel Willy* and a *Fruit Machine*.

And that's really what you want to do when you're checking out this one ... 'move on'. The games aren't that bad as do-it-yourself games but, they won't provide that much fun. Take a good look at the words printed on the outside of the package before you buy ... the title of the package really does say it all. **1/5** MISS

Ross: Treat the title of this game like a Government Health Warning ... except this time, take notice of it! Believe me, the Spectrum loading pattern is much more exciting than the game. **1/5** MISS

Roger: Well, I for one will certainly buy it. They may not be great games, but they're fun ... and that must count for quite a lot! At least you know what you're getting! **2/5** MISS



VIDEO POOL

OCP/£5.95

Roger: As much as I deeply hate the infestation of most of my favourite liquid recreation facilities with 8-ball pool tables, used by cretins who waste good drinking time, I found myself appalled by a distinct liking for this game — evidenced by the fact that I sat playing it for hours. Apart from a slight aberration in that the Speccy version only appears to have six balls, content is generally faithful to the real thing.

The computer gives you a choice of large or small pockets before starting and then frame up the balls, which are marked with values that multiply with the marked values on the pockets. Sighting is done by moving a target crosshair around the border of the table and the force beyond your stroke is self-governed by a simple system of letting an on-sreen scale rise whilst holding the 'fire' key down. Releasing it wallops the ball with the appropriate amount of oof.

Beyond this basic game, which can be played by two people and continue for frame after frame as long as the three 'lives' aren't lost through foul shots or stuffing the black down an orifice, variations are available to experts, like potting balls in a set order. There is also an 'edit' facility, allowing superstars to 'set up' interesting problems on the table.

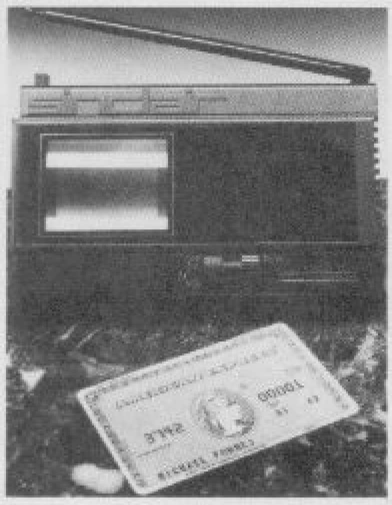
It *could* put the breweries out of business ... **4/5** HIT

Ross: "Oh no, not another pool game", I hear you say. Well, you're in for a surprise — there are lots of nice graphics and a darn good game of pool, with all the usual options plus a great 'Edit the Table' feature MISS

Dave: If you're on the market for a pool game, then this is the one for you. **3/5** MISS

READER SURVEY

Tell us a bit about yourself ... and you could find yourself walking away with a Sinclair Research Pocket TV and a huge bundle of Spectrum software!



OK, you lot, we're looking for some criticism ... constructive criticism, of course! We'd like to know what you think of this and past issues of *Your Spectrum* ...and, if you're lucky, you stand to win a prize of a Sinclair Research Pocket TV and a bumper bundle of software — all in the interests of bribery and corruption, of course, your Honour.

There are a few questions for you to answer about our glorious magazine ... and then there's a tie-breaker question asking you to come up with a new idea for the magazine. It's not that hard to do — poor ol' Kev (*Less of the 'old'! Ed.*) has to do that each and every issue — but your answer could win you any one of the fabulous prizes we've got up for grabs.

The person coming up with the best idea will be awarded a Sinclair Research Pocket TV and a bumper bundle of Spectrum software. The next four suggestions of merit will also carry away a bumper bundle of software. And, lastly, there'll be ten free subscriptions to *Your Spectrum* for the runners-up.

Obviously, these questions are important to us — we know we're the best magazine for Spectrum users ... but how else are we going to make it better without getting some all-important feedback from you? Please read the issue before you fill in your answers and think seriously about those new ideas — remember there's a Pocket TV to be won for the best one.

And just so you don't get out of pocket, you can send us this completed reader survey form (or a photocopy) for free. Simply bung it in an envelope and address it to *Your Spectrum Reader's Survey, Your Spectrum, FREEPOST 7, London W1E 4EZ.*

Section One — About You

1. How old are you?

☐ Under 10 ☐ 10-15 ☐ 15-20
☐ 20-25 ☐ 25-35 ☐ Over 35

2. What sex are you? (if in doubt consult an expert!)

☐ Male ☐ Female

Section Two — About your machine and software

3. What equipment do you have at the moment and what are you planning to buy in the next 12 months? If you're upgrading part of your system, please tick both boxes.

	Already own	About to buy
16K Spectrum	☐	☐
48K Spectrum	☐	☐
Spectrum+	☐	☐
Joystick Interface	☐	☐
Joystick	☐	☐
Monitor	☐	☐
Microdrive(s)	☐	☐
Floppy disk drive	☐	☐
Printer	☐	☐
Replacement Keyboard	☐	☐
Light Pen/Graphics Tablet	☐	☐
Speech Unit	☐	☐
Modem	☐	☐

4. What type of software do you buy?

	Regularly	Occasionally
Arcade Games	☐	☐
Adventure Games	☐	☐
Utilities/Languages	☐	☐
Educational	☐	☐
Word Processing	☐	☐
Other business (eg Spreadsheets)	☐	☐
Graphics	☐	☐

5. What do you use your machine for? Please enter 1 in the appropriate box for your main use, 2 for second and 3 for third.

Graphics	☐
Word Processing	☐
Other business (eg Spreadsheets)	☐
Programming/Languages	☐
Education	☐
Games	☐

Section Three — About you reading habits

6. Which other magazines do you read, and how often?

	Regularly	Occasionally
Sinclair User	☐	☐
Crash	☐	☐
Sinclair Programs	☐	☐
ZX Computing	☐	☐
Computer & Video Games	☐	☐
Computer Gamer	☐	☐
Your Computer	☐	☐
Personal Computing Today	☐	☐
Popular Computing Weekly	☐	☐
Home Computer Weekly	☐	☐

Any other mag? Tell us which.....

7. How many magazines do you normally buy every month?

☐ 1 ☐ 2 or 3 ☐ 4 or more

8. Here is a list of the types of articles found in a typical issue of *Your Spectrum*. For each type, please tell us if you'd like to see more, less or about the same amount in future issues.

	Less	Same	More
News	☐	☐	☐
Hardware Tips	☐	☐	☐
Hacking & POKEing	☐	☐	☐
Software Charts/Top Scores	☐	☐	☐
Letters	☐	☐	☐
Competitions	☐	☐	☐
Hardware Reviews	☐	☐	☐
Megagame Reviews	☐	☐	☐
Short Game Reviews	☐	☐	☐
Other Software Reviews	☐	☐	☐
Programming Tips	☐	☐	☐
Games Listings to Key In	☐	☐	☐
Adventure Playing Tips	☐	☐	☐
Arcade Playing Tips	☐	☐	☐

Answer all the questions in the Reader's Survey, fill in this coupon, cut out the page, and either fold (following our instructions) or send in an envelope to *Your Spectrum Reader's Survey, Your Spectrum, FREEPOST 7, London W1E 4EZ.*

If you were the Editor of *Your Spectrum*, what would be the first change you would make?..

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Name ....

Address ....

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.... Postcode ....

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BLOCK CAPITALS PLEASE

FOLD 1

FOLD 3

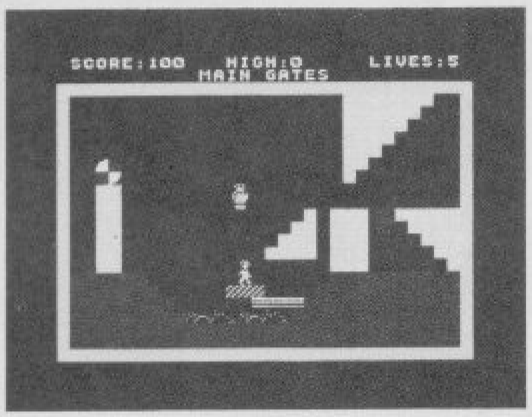
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London W1E 4EZ.

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FOLD 4 & TUCK

FOLD 2

JOYSTICK JURY



CHARLIE AND THE CHOCOLATE FACTORY

Hill MacGibbon/£9.95

Ross: Well, the box looks nice .. and inside there's a great book, Roald Dahl's *Charlie And The Chocolate Factory*. Oh yes, there's also a cassette with five games on it, but the less said about that the better!

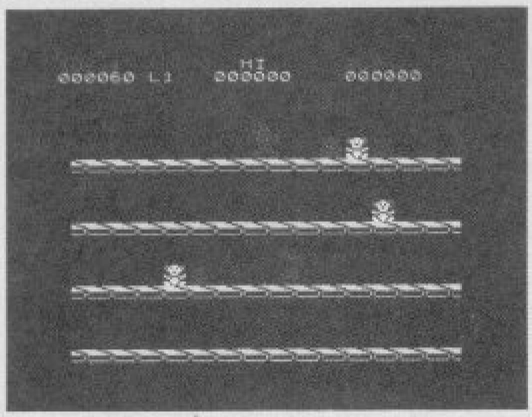
Based on various episodes in the book, the four games on side one of the tape load as one and can be accessed in any order from a menu. However, you're going to have to beat all four games on side one to get the code you'll need to start playing the game on side two.

The first game features Augustus Gloop being squirted around the maze of tubes of the sweet-making machine — your task is to guide him safely to the flask. Game two has Violet Beauregarde directing deadly blueberries at you from gaps in the wall of the juicing room. In the third game. Veruca Salt has to fend off squirrels with poisonous nuts and lastly, game four depicts Mike Teavee in a levels games collecting chocolate bars whilst avoiding killer TV cameras.

The game on the other side is a sort of *Jet Set Willy* clone, but it's not good enough to make up for the games on side one. Overall, I'd say the package was overpriced, with the best item being the book. **2/5** **MISS**

Dave: I loved the film, but the game doesn't quite live up to it. There's a lot of variety, but I found the individual games frustrating as they were either too easy or too hard. **2/5** **MISS**

Roger: Well, if you've read the book and seen the film, you'd be well-advised to miss the game. Seeing as how Roald Dahl is usually known for his horror stories, he'll probably be very happy with the Spectrum version! **2/5** **MISS**



DON'T PANIC

Firebird/£2.50

Dave: How many games seem to be centred around the goings-on of a loading bay? Are they really such interesting places? Probably not ... but then again, the games they inspire aren't that interesting either!

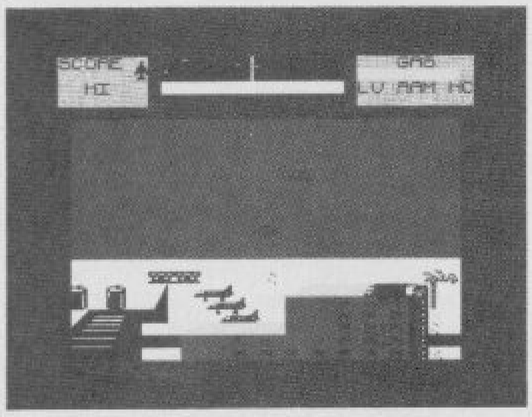
Don't Panic has you controlling a droid working in the loading bay, and it's your job to get it zooming around the screen loading odd bits and pieces in a rocket; you do this by purifying the screen with your laser and then pushing them into the hold with further blasts from your laser. Which all sounds easy, until someone mentions the indestructible alien that's hanging around to spoil all your fun.

The goods you've to pack on to the rocket are all good fun, such as poisonous Teddy Bears and so on, but overall the game is quite frustrating. The fact that the alien can not only move faster than you, but also manage to deal out death with astonishing accuracy, just made the whole affair rather boring after a while.

Arcade aces will probably find it a reasonable challenge, but there isn't enough variety here to make it a classic. **2/5** **MISS**

Ross: This ain't a bad game at all. Good graphics and a simple idea make for a game that's compulsive and tricky. **3/5** **HIT**

Roger: And I thought this would have something to do with *Hitch-hiker's Guide To The Galaxy*. How wrong I was! Still, it's not a bad little number ... pretty piccies anyway. **3/5** **MISS**



FALCON PATROL 2

Virgin Games/£7.95

Roger: It would be easy to heap abuse on this game, but I'm not sure whether it really deserves it!

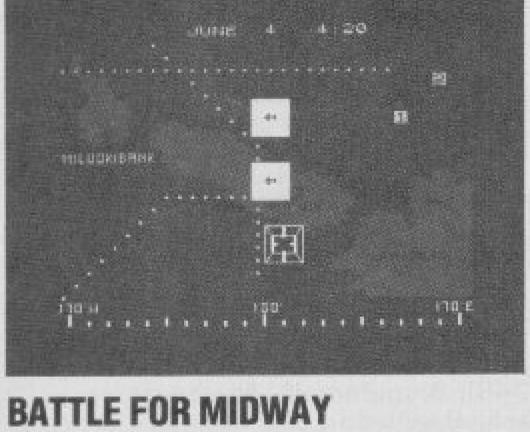
The format of aerial combat with relatively limited sophistication in VTOL aircraft control, some repetitive scrolling scenery and a variety of unpleasant helicopters bopping about looking for a missile in the laughing gear, is so tired and unoriginal that I started groaning as soon as it was loaded ...

Assuming that it'd take less time to get good at — and bored with — then it takes Pete Shaw to hack into a ham sandwich, I scrambled into action and discovered that it was just a little bit tougher than first expected. Learning 'vectoring' and the technique of diving to fire missiles downwards stretched my involvement and, finally, I got a bit hooked.

Sure, it's corny. Nevertheless, it's competent arcade thuggery and, if valued as such, earns its keep. **3/5** **HIT**

Dave: Deep down, I've always wanted to blast helicopters out of the sky ... trouble is, most programs don't give you that authenticity. *Falcon Patrol 2*, on the other hand, fulfills all of my warmongering ambitions. Great stuff ... let's see more, please. **4/5** **HIT**

Ross: The graphics in this game are amazing ... top marks to Virgin's back-room programmers. A vast improvement over *Falcon Patrol*. **5/5** **HIT**



BATTLE FOR MIDWAY

PSS/£9.95

Dave: Wargames seem to be in vogue — which means that the quality of said games is improving by leaps and bounds.

This is true in part for *Battle For Midway*. The game, as the name implies, places you in charge of the American fleet around Midway island just after the bombing of Pearl Harbour. The layout of the screen comprises a map — and various status screens are available for you to discover pointers on how the enemy is doing.

The naff bit for me came when the Japs came flying in out of the sun — the action suddenly altered to arcadia. It suddenly becomes your task to shoot down the enemy planes and sink their boats as well.

Perhaps I'm being old-fashioned but I prefer a wargame to be a strategic affair, and not a game that's decided on the speed of pressing the keys. As a result, *Battle For Midway* ends up being between arcade and wartime simulation — although I'm happy to report that strategists with a forgiving nature will enjoy it. **3/5** **MISS**

Roger: Pretty sophisticated stuff this. Couldn't understand a word of it, mind you, but that probably means that all you would-be-warmongers will have fun. **3/5** **MISS**

Ross: Yet another wargame. The playing area's a bit cramped, the graphics aren't too hot and it's incredibly slow! **1/5** **MISS**

JOYSTICK JURY



FAHRENHEIT 3000

Firebird/£2.50

Ross: How come the software houses are still churning out *Jet Set Willy* lookalikes? Who knows ... but here's another one!

The scenario this time is to shut down the Dragon nuclear reactor and prevent it from melting down. To achieve this you've got to close off 64 (count 'em) pressure valves before the core reaches 3000 degrees. Time is obviously limited, what with all that leaking radiation hanging about, but all you've got to do to turn off a valve is to touch them. Of course, if it's already leaking you're in a spot of trouble...

At first glance, all of these games look fairly similar — but in play, few come up to the high standard set by *Jet Set Willy* or *Manic Miner*. Unfortunately, *Fahrenheit 3000* is no exception. The incredible jumping power of our hero makes the game a bit tricky to play — probably the result of too much radiation. The graphics are fairly standard, a bit sparse and flickery too.

It's a shame that too much reverance has been placed on the *MMs* and *JSWs* of this world — a copy is never as good as the original. **1/5** **MISS**

Dave: Yet another *JSW* lookalike, but with superior jumping abilities and smoother graphics. For £2.50 it's probably worth it but I, for one, am getting really bored with this sort of game. **1/5** **MISS**

Roger: Now where have I seen this little lot before? Good grief, *JSW*'s got more clones than *Boy George!* Why can't someone come up with something original for a change? **2/5** **MISS**



ROSS'S RAVE OF THE MONTH

HERBERT'S DUMMY RUN

MikroGen/£9.95

Ross: Herbert last showed his face as the little nipper crawling around biting ankles in *Everyone's A Wally*. But now he's been elevated to appear in his own adventure.

And hasn't he grown! Herbert's now an inquisitive toddler and he's wandered off unattended into a large department store. Of course, being 'wallies', his folks Wilma and Wally have deposited themselves in the 'Lost and Found' office and are awaiting Herbert's return. Herbert, on the other hand, has quite a journey on his hands — as he searches all over the various departments in the store for his parents.

When you first start the game, the colourful background and smooth sprite movement will impress you the most. Herbert is made up of quite a small graphic, but he's only a youngster and he does move well! The little chap has three lives and he can carry up to two objects at a time; picking up objects is done in the time-honoured tradition of walking over them.

Herbert can move more or less anywhere he likes in the store, but if you want to get on you'll have to give some thought to matching up the various 'finds' along the way. Some of the screens require jumping and timing skills whereas other screens are much simpler; for instance, one screen reminds me of *Breakout*.

Of course, overall, the humour we've come to expect from MikroGen wins out. I'd have no problems recommending this game ... 5/5 **HIT**

Dave: The usual high-quality graphics and a standard MikroGen storyline. Great if you like all the others. 2/5 **HIT**

Roger: I knew they'd do it eventually — at last we've got an arcade game set in a shopping arcade! Wally fans will love it. My only complaint is that it wasn't all set in Mothercare. 4/5 **HIT**

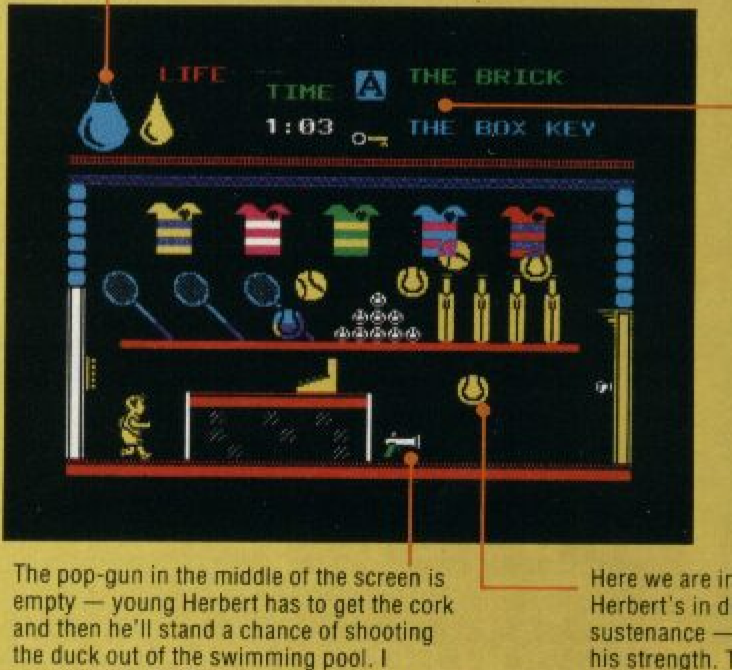


This is the Toy department — and that's exactly where you'd expect our be-nappied hero, Herbert, to be hanging out.

To open the door, Herbert must leap up at the handles — but first, he's going to have to get past those spinning tops. Each time Herbert hits one of the tops, the tear-drop fills up ... and when it does, he'll have lost one of his three lives.

Jumping on top of the Jack-in-the-Box will blast young Herbert up to the dizzy heights of the top levels. It won't help you much, but he will be nearer the honey-pot which he'll need if he's going to deal with the Teddy Bear.

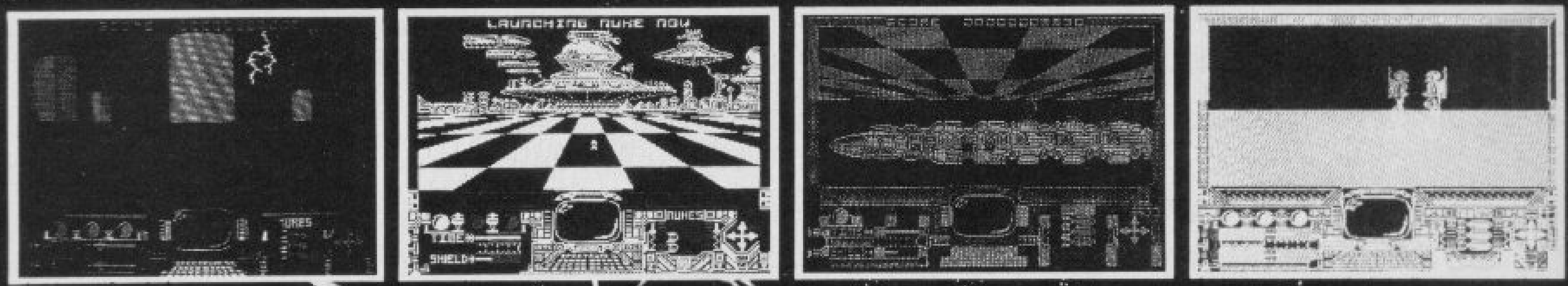
Herbert's status is shown as the large tear-drop — as this fills up so Herbert gets more and more unhappy .... and less co-operative! The smaller tear-drops indicate how many lives our heroic youngster has left.



Indicated here are the objects young Herbert has in tow, complete with a brief description of what they are. To pick up a new object, simply walk over it and leave one of your possessions behind (you're only allowed to carry two objects at a time).

The pop-gun in the middle of the screen is empty — young Herbert has to get the cork and then he'll stand a chance of shooting the duck out of the swimming pool. I wonder if the RSPCA knows all this is going on?

Here we are in the Sports department, and Herbert's in dire need of some sticky sustenance — sweets to you — to build up his strength. To get past this room, all Herbert has to do is get past the bouncing tennis balls without getting hit too much ...





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Argus Press Software Group

This program is available on Digi'T'ape

```
 400 CLEAR 59999: LET C=0: RESTO
RE 410: FOR p=60000 TO 60135: RE
AD o: LET C=C+O: POKE p,o: NEXT
p
 410 DATA 42,79,92,1,15,0,9,1,12
1,234,113,35,112,1,3,0,9,54,83,3
3,26,92,54,16,201,229,197,213,24
5,205,133,234,241,209,193,225,20
1,50,203,234,254,65,56,56,58,203
,234,254,91,48,49,58,69,92,95,58
,70,92,87,33,184,11,124,186,32,4
,125,187,40,14,35,62,19,188,32,2
42,62,136,189,32,237,195,196,234
,58,203,234,214,65,79,6,0,33,204
,234,9,126,50,203,234,58,203,234
,205,244,9,201,65,68,79,71,85,74
,77,65,73,81,88,69,78,84,66,89,9
0,87,70,75,80,67,86,82,72,83,76
 411 DATA 0,0
 415 IF C<>14412 THEN  PRINT "SO
RRY, THERE'S AN ERROR IN THE  DA
TA!": STOP
 420 RANDOMIZE USR 60000
 430 RESTORE 500
 500 BORDER 1: PAPER 1: INK 7: C
LS
 550 POKE 23658,8
 600 GO SUB 9000
```

Lines 400-600 Set up encryption routine.

```
1000 REM * MAIN CONTROL ROUTINE
1003 LET ON=1: LET OFF=0
1005 CLS
1010 GO SUB 2400
1020 LET COPY=1
1022 LET C$=S$(COPY,1 TO )
1024 GO SUB 1300
1026 IF TRUE=0 THEN  GO TO 1022
1028 LET C$=S$(COPY,1 TO )
1030 GO SUB 1600: LET FLAG=0
1040 GO TO 1010*(LINE=1)+1020*(L
INE=2)+1050*(LINE=3)
1050 GO SUB 2000
1060 PRINT
1070 IF J$="00" THEN  PRINT : PR
INT "COULD YOU REPHRASE THAT OLD
 CHAPDIDN'T QUITE GET THE GIST."
: GO TO 1050
1080 IF VAL (J$)>=13 THEN  GO TO
 1140
1090 LET PS1=1
1100 IF L$(LOCAL,PS1 TO PS1+1)="
00" THEN  GO TO 1140
1110 IF L$(LOCAL,PS1 TO PS1+1)<>
J$ THEN  LET PS1=PS1+4: GO TO 11
00
1120 LET LOCAL=VAL (L$(LOCAL,PS1
+2 TO PS1+3))
1130 LET PS1=1: GO TO 1010
1140 LET COPY=1
1150 GO SUB 1500
1160 GO TO 1010*(LINE=1)+1020*(L
INE=2)+1170*(LINE=3)
1170 GO SUB 1300
1175 IF TRUE=0 THEN  GO TO 1150
1180 GO SUB 1600
1185 LET COPY=1
1190 GO TO 1010*(LINE=1)+1020*(L
INE=2)+1050*(LINE=3)+1210*(LINE=
4)+1150*(LINE=5)
1200 REM * INTIALISE NEW GAME *
1210 PRINT : PRINT "WOULD YOU LI
KE ANOTHER GAME ?"
1220 IF INKEY$<>"Y" THEN  GO TO
1220
1230 RUN
```

Lines 1000-1230 This is the main body of the program. It controls all the subroutines which are called in the game plus it looks after the overall flow of the program.

```
1300 REM * TEST STATUS *
1310 LET TRUE=0
1320 LET PS3=1
1330 IF C$(PS3)="*" THEN  LET TR
UE=1: RETURN
1340 LET CODE1=VAL C$(PS3)
1350 LET CODE2=VAL C$(PS3+1 TO P
S3+2)
1360 GO SUB 1390+10*CODE1
1370 IF TRUE=1 THEN  LET PS3=PS3
+3: GO TO 1330
1380 LET COPY=COPY+1
```

ESCAPE FROM CASTLE RATHBONE

This is your Commandant speaking. Velcome to Castle Rathbone. Make yourself at home — you are going to be here for a long, long time. No-vun has ever eskaped and no-vun ever vill.* Dougie Bern *has seen to that!

Psssst! *Who me?* Yeah, you. Come over here where it's not bugged. *You mean there are bugs in this program?* Well, you can never be too sure. (*I do hope you're joking! Ed.*). You've just been nominated as head of the escape committee. *What an honour!* Well, we've chosen you as the most important member of the team because you're the only one who can possibly help our cracked troops to escape. *Don't you mean crack troops?* Have you met them?

Now pay close attention 'cos there isn't much time. Your task is to help Troubleshootin' Pete, Tony 'Slim' Samuels and Roger Willis to get away from the confines of Castle Rathbone. *Why?* Well, how would you like to be locked up for years on end with the three of 'em? The escape committee has come up with a fiendishly ingenious plan that'll confuse our captors completely — it's confused us already and we reckon you're the only one who can suss it out.

There are four different escape routes for the three of them and you, of course, and each is tailored to the needs of the individual. That means you can't get Roger out using the route planned for Tony and so on. And you must get them out in the right order, as decided previously by the escape committee.

In fact, if you succeed — and you ought to know the odds are against you — the remaining prisoners of Castle Rathbone will be overjoyed. So much so, that they've persuaded the Editor to stump up a bundle of ten free pieces of software if you're the first to get word to us that proves you all got out alive. Plus, there's another five pieces for the best *complete* map of Castle Rathbone.

Look I've got to go now, I can see one of the guards coming. Oh, and good luck — you're gonna need it. Say you get stuck down a tunnel with Tony! Ugh!



THE ADVENTURE

Before you can escape from Castle Rathbone, you're going to have to type in the main listing. But be warned — as the messages are all encrypted, you must be very careful when tackling the task. If you're more daunted by the typing than the escaping, then remember that the game appears on this month's Digi't'ape cassette.

No Help Here
Please don't ring the real Helpline if you get stuck. Remember you're supposed to be trying to get Pete out — he's just as much in the dark about the solution as you are.

```
1390 RETURN
```

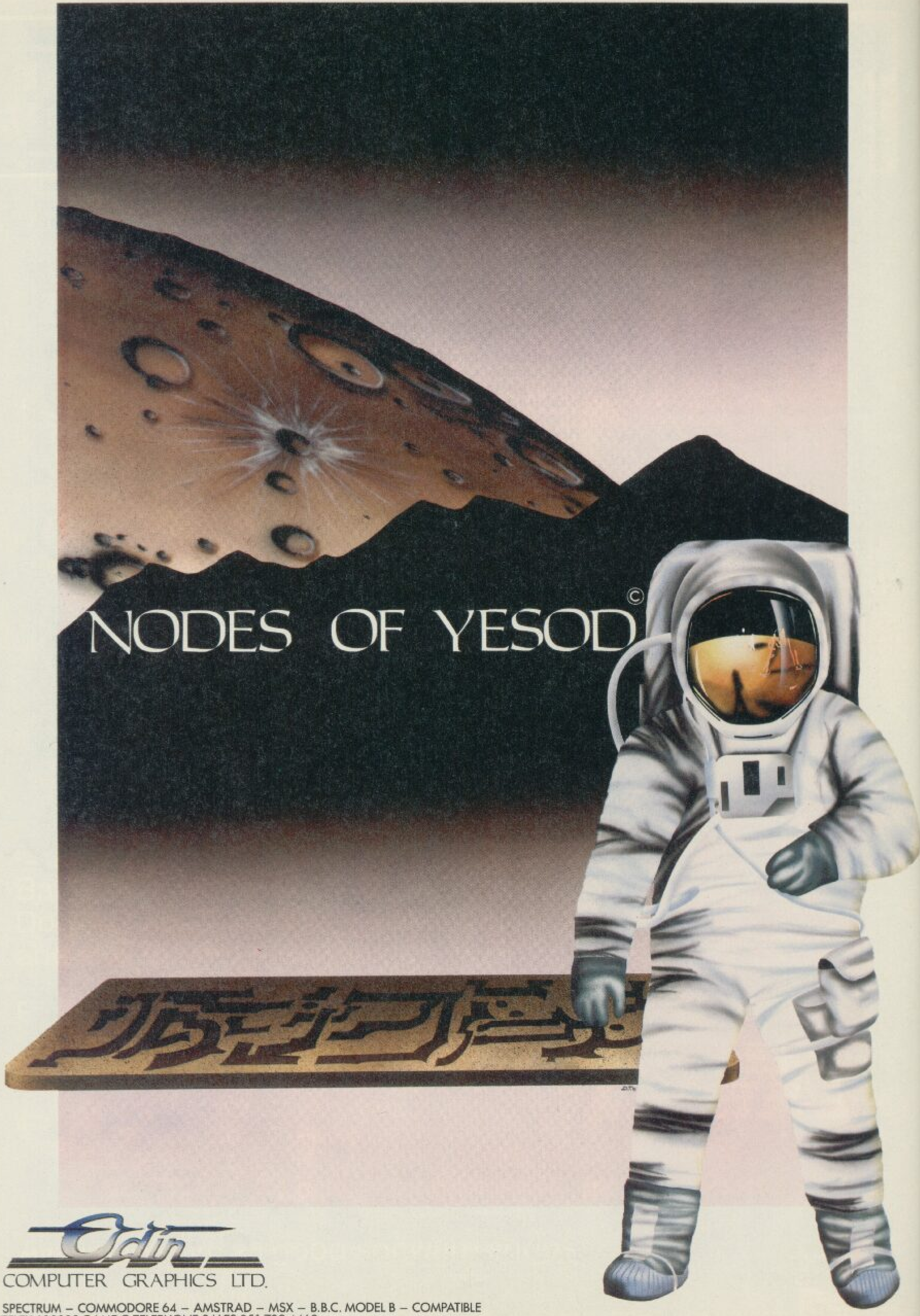
Lines 1300-1390 This subroutine tests to see whether an action should be taken or whether any messages should be printed.

```
1400 LET TRUE=(CODE2=LOCAL): RET
URN
1410 LET TRUE=(O(CODE2)=LOCAL OR
 O(CODE2)=-1): RETURN
1420 LET TRUE=(O(CODE2)<>LOCAL A
ND O(CO'E2)>=0): RETURN
1430 LET TRUE=(O(CODE2)=-1): RET
URN
1440 LET TRUE=(F(CODE2)=ON): RET
URN
1450 LET TRUE=(F(CODE2)=OFF): RE
TURN
1460 LET TRUE=(C(CODE2)=1): RETU
RN
```

Lines 1400-1460 These are the lines in the test subroutine that carry out the testing.

```
1500 REM * MATCH INPUT *
1510 IF COPY>ACTION THEN  GO TO
1560
1520 IF E$(COPY,1 TO 2)<>J$ THEN
 LET COPY=COPY+1: GO TO 1510
1530 IF (E$(COPY,3 TO 4)<>K$ AND
 E$(COPY,3 TO 4)<>"00") THEN  LE
T COPY=COPY+1: GO TO 1510
1540 LET C$=E$(COPY,5 TO )
1550 LET LINE=3: RETURN
1560 IF FLAG=1 THEN  LET LINE=2:
 LET FLAG=0: RETURN
1570 PRINT : PRINT : PRINT "'FRA
ID NOT OLD CHAP YOU CAN'T";
1580 IF VAL J$<13 THEN  PRINT "
 GO THAT WAY";
1590 PRINT ".": LET LINE=1: RETU
RN
```

Lines 1500-1590 This subroutine does the matching of input and actions within the program.


NODES OF YESOD©

```
1600 REM * PERFORM ACTIONS *
1610 LET FLAG=1
1620 LET PS3=PS3+1
1630 IF C$(PS3)="*" THEN  RETURN

1640 LET CODE1=CODE (C$(PS3))-64
1650 IF C$(PS3+1)="*" THEN  GO T
O 1670
1660 LET CODE2=VAL (C$(PS3+1 TO
PS3+2))
1670 LET LINE=5
1680 GO SUB 2580+20*CODE1
1690 IF LINE<>5 THEN  RETURN
1700 LET PS3=PS3+3
1710 GO TO 1630
```

Lines 1600-1710 Once a match is found, this is the part of the program that actually performs the actions.

```
2000 REM * INPUT COMMAND *
2005 POKE 23692,255
2010 LET I$="": PRINT : PRINT ">
";
2020 LET A$=INKEY$: IF A$="" THE
N  GO TO 2020
2025 IF INKEY$<>"" THEN  GO TO 2
025
2030 IF A$=CHR$ (13) THEN  GO TO
 2080
2040 PRINT A$;
2050 LET I$=I$+A$: IF A$=" " THE
N  LET I$=I$+" "
2060 IF LEN I$>32 THEN  PRINT :
PRINT "COMMAND TOO LONG.": GO TO
 2010
2070 GO TO 2020
2080 IF I$="" THEN  GO TO 2020
2085 IF I$(1)=" " THEN  LET I$=I
$(2 TO ): GO TO 2085
2090 LET C(1)=C(1)-(C(1)>0)
2095 LET I$=I$+"    "
2100 LET PS2=0
2110 LET J$="00": LET K$="00"
2120 LET PS2=PS2+1
2130 IF PS2>LEN I$ THEN  RETURN
2140 IF I$(PS2)=" " THEN  GO TO
2120
2150 IF PS2=1 THEN  GO TO 2170
2160 IF I$(PS2-(PS2>1))<>" " THE
N  GO TO 2120
2170 REM  IF LEN I$<4 THEN  LET
W$=I$(PS2 TO ): GO TO 2180
2175 LET W$=I$(PS2 TO PS2+3)
2180 LET PS2=PS2+3
2190 FOR N=1 TO WORDS
2200 IF W$=D$(N,3 TO ) THEN  GO
TO 2220
2210 NEXT N: GO TO 2120
2220 IF J$="00" THEN  LET J$=D$(
N,1 TO 2): GO TO 2120
2230 LET K$=D$(N,1 TO 2)
2240 RETURN
```

Lines 2000-2240 This subroutine accepts the input from the user and then tries to find a match with the dictionary.

```
2400 REM * LOCATION DESCRIPTION
2405 IF F(1)=OFF THEN  GO TO 244
0
2406 LET C(2)=C(2)-(C(2)>0)
2410 IF F(2)=ON THEN  GO TO 2440
2420 LET C(3)=C(3)-(C(3)>0)
2430 PRINT : PRINT "FRIGHTFULLY
DARK HERE SKIPPER   CAN'T SEE A
DASHED THING.": RETURN
2440 PRINT : PRINT
2445 IF V(LOCAL)=1 THEN  GO TO 2
455
2450 CLS : GO SUB 3480+20*LOCAL:
 GO TO 2460
2455 PRINT "YOU ARE IN ";: GO SU
B 3490+20*LOCAL
2460 LET V(LOCAL)=1
2465 FOR N=1 TO TNOBS
2470 IF O(N)=LOCAL THEN  GO TO 2
490
2480 NEXT N: RETURN
2490 PRINT : PRINT "ALSO HERE IS
:-": PRINT
2500 FOR N=N TO TNOBS
2510 IF O(N)=LOCAL THEN  PRINT O
$(N,1 TO )
2520 NEXT N: RETURN
```

Lines 2400-2520 This is the subroutine that prints the location description.

```
2550 REM * PERFORM ACTIONS *
```

```
2600 PRINT : PRINT
2605 GO SUB 2995+5*CODE2
2610 RETURN
2620 PRINT : PRINT "OK SKIPPER,
ROGER,WILCO AND OUT."
2640 LET LINE=2: RETURN
2660 LET LINE=3: RETURN
2680 LET LINE=1: LET V(LOCAL)=0:
 RETURN
2700 FOR N=1 TO TNOBS
2702 IF O(N)<0 THEN  GO TO 2708
2704 NEXT N
2706 PRINT "YOU DON'T APPEAR TO
BE CARRYING ANYTHING SKIPPER.":
LET LINE=1: RETURN
2708 PRINT : PRINT "YOU HAVE WIT
H YOU:-": PRINT
2710 FOR N=N TO TNOBS
2712 IF O(N)<0 THEN  PRINT O$(N,
1 TO )
2714 NEXT N
2716 LET LINE=1: RETURN
2720 LET LOCAL=CODE2: RETURN
2740 IF NOBJ>=5 THEN  PRINT "SOR
RY SKIPPER 'FRAID THE OLD    BOM
B BAYS ARE FULL, YOU CAN'T   CAR
RY ANY MORE.": LET LINE=1: RETUR
N
2742 IF O(CODE2)=-1 THEN  PRINT
"THINK YOU'LL FIND YOU ALREADY
 HAVE IT OLD CHAP.": LET LINE=1:
 RETURN
2744 LET O(CODE2)=-1
2746 LET NOBJ=NOBJ+1
2748 RETURN
2760 IF O(CODE2)<>-1 THEN  PRINT
 "'FRAID YOU DON'T HAVE ";O$(COD
E2): LET LINE=1: RETURN
2762 LET O(CODE2)=LOCAL
2764 LET NOBJ=NOBJ-1
2766 RETURN
2780 LET O(CODE2)=LOCAL: RETURN
2800 IF O(CODE2)<N THEN  LET NOB
J=NOBJ-1
2802 LET O(CODE2)=0
2804 RETURN
2820 LET TEMP=O(CODE2)
2822 LET O(CODE2)=O(CODE2+1)
2824 LET O(CODE2+1)=TEMP
2826 RETURN
2840 LET F(CODE2)=ON: RETURN
2860 LET F(CODE2)=OFF: RETURN
2880 LET C(CODE2)=VAL C$(PS3+3 T
O PS3+4): LET PS3=PS3+2: RETURN
2900 PRINT "YOU SURE ABOUT THIS
SKIPPER?"
2902 IF INKEY$="" THEN  GO TO 29
02
2904 LET A$=INKEY$
2906 IF A$<>"Y" THEN  LET LINE=1
: RETURN
2920 LET LINE=4: RETURN
```

Lines 2550-2920 This is the slave subroutine which carries out all the left over routines that need to be performed after specific commands have been entered.

```
3000 PRINT "MWBDNZYXBBMHL' TKMK'
 XKWK 'MXHY HY G WKUBWAKA FKYYGC
K.'"
3001 PRINT : PRINT "GY XKGA BR M
XK KYUGTK UBFFHMMKK,OBDW EBN HY
MB CKM FK, MBLO,    WBCKW GLA OB
DWYKZR BDM BR MXK   AWKGAKA UGYM
ZK WGMXNBLK, MXBDCX LBM LKUKYYGW
HZO HL MXGM BWAKW   YB XKWK GWK
MXK UZDKY MB YBBMXK GZZ OBDW NZD
KY;"
3002 PRINT : PRINT "FGSK ZHSK G
FBZK GLA AHC G NHC  XBZK.  HR OB
D RHLA MXK XKGM,    MBLO'Y KYUGT
K QHZZ NK LKGM."
3003 PRINT "WBCKW UGL RZO NDM LB
M MXK QGO   OBD'A MWO, XK'A AB N
KMMKW BLK   RKKZY MB AB HM BL QX
KKZY."
3004 PRINT "FO MXKGMWHUGZ TGHL H
Y LBM GZZ HLVGHL, 'UBY FO GFNHMH
BL'Y MB MWO GLA WKGUX RBW MXK YS
O.": PAUSE 0: RETURN
3005 PRINT "MXK NZDK TKMKW NBBS"
: RETURN
3010 PRINT "GZZ HY AGWS. OBD GWK
 YDWWBDLAKA NO G NZGUS VBHA, GL
HLSO NZGUS  -LKYY. MXKWK HY LB Z
HCXM LBM"
3012 PRINT "KVKL G CZHFFKW HM HY
 G NZGUSLKYYMXGM LB NDZN, LB UGL
AZK, LB, LBMKVKL MXK NWHCXMKYM Z
HCXM UGL    TKLKMWGMK.": RETURN
3015 PRINT "GZZ MXK NBBSY UBFK M
DFNZHLC ABQLBL OBDW LBQ GUXHLC X
KGA. YKWVKY OBD WHCXM RBW ABHLC
YBFKMXHLC   YB BNVHBDY.": RETURN

3020 PRINT "QXGM'Y MXHY G FKYYGC
K BL MXK    MOTKQWHMKW GY QKZZ G
Y G RBDW AGOBZA UXKKYK GLA THUSZ
K YGWLHK.   HM WKGAY (LB LBM MXK
 YGWLHK)    016362416XZTZHL."
3022 PRINT "OBD LBMHUK MXK 'K' S
KO HY       FHYYHLC QXHUX KJTZGH
LY GZZ OBD  KVKW MXBDCXM GNBDM O
.Y.": RETURN
3025 PRINT "OBD UBLMWGUM RBBA TB
HYBLHLC GLA AHK MQB AGOY ZGMKW Q
WHMXHLC HL  GCBLO.": RETURN
3030 PRINT "HM'Y MWD - QBDZA H Z
H MB OBD.": RETURN
3035 PRINT "MXKO RZO GQGO NKRBWK
 OBD UGL    CKM UZBYK.": RETURN
3040 PRINT "BLZO MXK UBWLRZGSKY
GWK DLBTKLKAGLA KAHNZK.": RETURN

3045 PRINT "OBD UGL'M KGM G UBFT
DMKW        KYTKUHGZZO QXKL XK'Y
 BLK BR FO  FGMKY.": RETURN
3050 PRINT "TXBLK XKZTZHLK.": RE
TURN
3055 PRINT "MXGLSY, OBD ABL'M ZB
BS MBB NGA  OBDWYKZR.": RETURN
3060 PRINT "OBD ABL'M XGVK GLO U
BHLY.": RETURN
3065 PRINT "OBD SHUS MXK NDUSKM,
 NDM BLZO   ZHMKWGZZO. OBD UZHFN
 HL GLA     AKYUKLA MB MXK NBMMB
F.": FOR Z=1 TO 100: NEXT Z: RET
URN
3070 PRINT "ABL'M KVKL NWKGMX BL
 HM MXKWK'Y GLBMXKW 470 FHUWB-UX
HTY EDYM    QGHMHLC MB YKM BRR M
XK NDWCZGW  GZGWF.": RETURN
3075 PRINT "OBD YKK G WDYMO BZA
FBMBWNHSK HLMXK UBWLKW QHMX RZGM
 MOWKY.": RETURN
3080 PRINT "LGO!! HM'Y G VGDZMHL
C XBWYK.    QXGM AHA OBD KJTKUM
HL G COF ?": RETURN
3085 PRINT "BXGO CZGYYXBTTKW, XH
 LBQ ZBBSG  UXHLKYK.": RETURN
3090 PRINT "OBD'WK YMGLAHLC BL M
XK UXGHW.": RETURN
3095 PRINT "OBD UGL LBQ YKK MXK
BDMYHAK     QBWZA GLA RWKKABF. Q
KZZ GUMDGZZOHM'Y G TDN UGZZKA MX
K FGWIDHY BRCWGLNO NDM HM'Y MXK
UZBYKYM     MXHLC MB RWKKABF OBD
'ZZ KVKW    RHLA HL UGYMZK WGMXN
BLK.": RETURN
3100 PRINT "MXK NHC CGFK HY YGNW
KQDZR. QKZZ MXK QDZR'Y BL MXK QG
ZZ, YB QXGM GNBDM MGSHLC MXK....
....."
3101 PRINT "(MXGM'Y KLBDCX XHLMH
LC KA.)": RETURN
3105 PRINT "90% BR MXK NBBSY GWK
 QWHMMKL NO MHF XGWMLKZZ, QXHUX
HY GNBDM    GVKWGCK. OBDW KOKY G
WK AWGQL MB MXK "
3106 PRINT "'NZDK TKMKW NBBS BR
MXHLCY MB   FGSK GLA AB.'": RETU
RN
3110 PRINT "'GLA HM EDY' YB XGTT
KLY H XGVK  G RHLHYXKA BLK BVKW
XKWK."
3111 PRINT "'MB NDHZA GL GKWBTZG
LK RWBF GL  KFTMO UBWLRZGSKY TGU
SKM, G      YIDKKPO NBMMZK GLA G
 E....'": RETURN
3115 PRINT "MXK QXBZK NBBSUGYK Y
QHLCY WBDLA MB WKVKGZ G YKUWKM W
BBF.": RETURN
3120 PRINT "HM'Y RDZZ BR UBZA QG
MKW (QXGM   AHA OBD KJTKUM) GLA
G ZBM BR    LGYMO YIDHCCZO MXHLC
Y.": RETURN
3125 PRINT "OBD CKM GNYBZDMKZO,
CZBWHBDYZO, WBGWHLCZO, MBMGZZO N
ZBMMB GLA   KVKL NKMMKW OBD ABL'
M QGSK DT   QHMX G XGLCBVKW. MXG
M'Y NKUGDYK OBD ABL'M QGSK DT."
3126 PRINT "OBD'WK UGTMDWKA GLA
```

MSX · TATUNG EINSTEIN · ZX SPECTRUM · SINCLAIR QL · AMSTRAD CPC 464

Thinking so

...thi

THE TASWORD WORD PROCESSORS

The extensive features of the Tasword word processors are ideal for both the home and business user. Every Tasword comes complete with a comprehensive manual and a cassette or disc. The cassette or disc contains your TASWORD and TASWORD TUTOR. This teaches you word processing using TASWORD. Whether you have serious applications or simply want to learn about word processing, TASWORD and TASWORD TUTOR make it easy and enjoyable.

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64 characters per line on che screen!

"Without doubt, the best utility I have reviewed for the Spectrum." HOME COMPUTING WEEKLY APRIL 1984

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The cassette program is supplied with instructions for microdrive conversion.

TASWORD TWO* ZX 48K Spectrum
cassette **£13.90**
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"There is no better justification for buying a 464 than this program." POPULAR COMPUTING WEEKLY NOVEMBER 1984

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A sixty-four character per line display and the ability to hold over five hundred lines of text at any time are just some of the features of this, the most recent, of the Taswords. Full interaction with the disc system – e.g. Tasword detects the presence of added drives and allows their use.

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TASWORD MSX* 64K MSX Computers
Fully inclusive mail order price **£13.90**

(cassette includes both disc and tape versions)

THE TASCOPY SCREEN COPIERS

The TASCOPY screen copiers print high resolution screen copies with different dot densities and patterns for the various screen colours. This gives the screen copies a shaded effect which presents on a monochrome scale the colours on the screen. With TASCOPY you can keep a permanent and impressive record of your screen pictures and diagrams. TASCOPY supports all the printers mentioned under TASPRINT.

TASCOPY (Spectrum + Interface 1)

The Spectrum TASCOPY is for use with the RS232 output on ZX Interface 1. It produces monochrome copies (in a choice of two sizes) as well as copies with the shaded "grey scale" effect described above.

TASCOPY ZX Spectrum cassette **£9.90**
microdrive cartridge **£11.40**

TASCOPY 464

Adds two new commands to the 464 Basic to give both a standard shaded screen copy as well as a "poster size" copy which is printed onto two or four sheets which can be cut and joined to make the poster.

TASCOPY 464 Amstrad CPC464 cassette **£9.90**
disc **£12.90**

TASCOPY QL

TASCOPY QL adds new commands to QL Superbasic. Execute these commands to print a shaded copy of the screen contents. Print the entire screen or just a specified window. TASCOPY QL also produces large "poster size" screen copies on more than one sheet of paper which can then be cut and joined to make the poster, and high speed small copies.

TASCOPY QL Sinclair QL
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A must for dot-matrix printer owners! Print your program output and listings in a choice of five impressive print styles. The Tasprints utilise the graphics capabilities of dot matrix printers to form, with a double pass of the printhead, output in a range of five fonts varying from the futuristic data-run to the hand writing simulation of Palace Script. A TASPRINT gives your output originality and style! The TASPRINTS drive all Epson compatible eight pin dot-matrix printers, e.g.

AMSTRAD DMP 1
EPSON FX-80
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MANNESMANN TALLY MT-80
STAR DMP 501/515
BROTHER HR5
SHINWA CP-80
COSMOS-80
DATAC PANTHER
DATAC PANTHER II

Five impressive print styles for your use:-

COMPACTA - bold and heavy, good for emphasis
DATA-RUN - A FUTURISTIC SCRIPT
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Palace Script - a distinctive flowing font

Typical Tasprint output. Please note that different makes of printer produce different sized output.

TASPRINT (Spectrum)

Drives all the printer interfaces compatible with TASWORD TWO and can be used to print TASWORD TWO text files as well as output from your own Basic programs.

TASPRINT 48K Spectrum cassette **£9.90**
microdrive cartridge **£11.40**

TASPRINT 464

Can be used to print AMSWORD/TASWORD 464 text files in addition to output from your own Basic programs. Drives the Amstrad DMP 1 in addition to the printers listed to the left.

TASPRINT 464 Amstrad CPC 464 cassette **£9.90**
disc **£12.90**

TASPRINT QL

TASPRINT QL includes a screen editor used to modify files created by other commercial software, such as QUILL, or by the user from BASIC. These modified files include TASPRINT control characters and may be printed, using TASPRINT, in one or more of the unique TASPRINT fonts.

TASPRINT QL Sinclair QL
microdrive cartridge **£19.95**

```
YXBM."
3130 PRINT "OBD'WK GZWKGAO YMGLA
HLC BL HM.": RETURN
3135 PRINT "MXK YSOZHCXM HY QHAK
 BTKL.": RETURN
3140 PRINT "MXKWK HY G NBBSUGYK
YQDLC BTKL  WKVKGZHLC G XHAAKL G
MMHU.": RETURN
3145 PRINT "QXGM AB OBD FKGL XKZ
T?  OBD'VK  BLZO EDYM YMGWMKA.":
 RETURN
3150 PRINT "MXK FGLHU FHLKW CBKY
 RDWHBDYZO  MB QBWS GLA AHCY OBD
 GL KYUGTK  MDLLKZ HL LB MHFK GM
 GZZ.": RETURN
3155 PRINT "GRMKW G CWKGM AKGZ B
R MBHZ       BR G FGCLHMDAK UBFTG
WGNZK BLZO  MB MOTHLC HL MXHY TW
BCWGF  OBD  FGLGCK MB UBLYMWDUM
G FBMBWUOUZKYMDLM WGFT.": RETURN

3160 PRINT "MBLO YUBRRY MXK UBWL
RZGSKY HL   KJGUMZO 3.5 FHUWBYKU
BLAY.        'MXGLSY H LKKAKA MXG
M H GZFBYM  RGAKA GQGO MB GL KZK
TXGLM'.": RETURN
3165 PRINT "WBCKW FGSKY G TKWKRK
UM EDFT BVKWMXK QGZZ MB RWKKABF.
 GRMKW G RKQAGOY OBD WKUKHVK G T
BYMUGWA QHMXMXK HFFBWMGZ QBWAY '
FGAK HM NGUS MB NZHCXMO UXGTY'."
: RETURN
3170 PRINT "QHMX G CWKGM AKGZ BR
 XDRRHLC     GLA TDRRHLC. MBLO UZ
HFNY BVKW   MXK NGMMZKFKLMY GLA
KYUGTKY MB  RWKKABF. (ZGYM YKKL
FBAKZZHLC   RBW MXK PKTTKZHL GHW
YXHT UB.": RETURN
3175 PRINT "MGZZO-XB UXGTY, UXBU
SY GQGO     (ABL'M RBWCKM MXK RWD
HM CDFY MBB)WBCKW, QHZUB, WKA-ZK
GAKW MB     MBQKW UZKGW RBW MGSK
-BRR, TGLAG1MB MKAAONKGW4 NGLAHM
Y GM        3 B'UZBUS, UWBYYWBGA
Y 6.30 GLA  GLO BMXKW YTHRRHLC,
EBZZO-XBUSKOYMHUS TXWGYKY OBD UG
L MXHLS BR."
3176 PRINT "TKMKW QHLCY XHY QGO
MB RWKKABF  LKVKW MB WKMDWL MB M
XK AWKGAKA  UGYMZK WGMXNBLK.": R
ETURN
3180 PRINT "TKMKW CHVKY G QBLAKW
RDZ          WKLAKWHLC BR QK'ZZ F
KKM GCGHL   AWKYYKA GY VKWG ZOLL
.": RETURN
3185 PRINT "MXK SLHCXM YGOY 'MG
VKWO FDUX   HM'Y FO AGO BRR GLA
H'F CBHLC MBFKKM MXK AGQL(FO CHW
ZRWHKLA) YB OBD UGL XGVK FO XKZF
KM.": RETURN
3190 PRINT "MXK AWGCBL MDWLY WBD
LA YZBQZO,  CHVKY OBD GL KVHZ ZB
BS GLA MXKL YZBQZO CWHZZY OBD DL
MHZ OBD'WK G LHUK UWHYTO ZDFT BR
 UXGWUBGZ.   YBFKXBQ H MXHLS OBD
 GWK IDHMK   AKGA.": RETURN
3195 PRINT "HM GHL'M XGZR XBM XK
WK GLA MXGMYYXBQ NHPPLKYY.": RET
URN
3200 PRINT "OBD LKKA YBFK YBWM B
R AHVKWYHBL MB 'YXBQ' MXK CDGWAY
.": RETURN
3205 PRINT "QXO ABL'M OBD CKM SL
BMMKA GLA   XKZT OBDWYKZR RBW G
UXGLCK.": RETURN
3210 PRINT "HR OBD XGA G UBFTGYY
 OBD'A CKM  MXK TBHLM.": RETURN
3215 PRINT "QXGM OBD LKKA HY G Z
HMMZK NBBYM.": RETURN
3220 PRINT "MWO WKTXWGYHLC MXHLC
Y GLA ZBBS  GWBDLA.": RETURN
3225 PRINT "QXGM'Y MXK RHWYM MXH
LC OBD AB   QXKL QGSHLC DT?": RE
TURN
3230 PRINT "MXKWK'Y LBMXHLC FDUX
 BR HLMKWKYMXKWK YSHTTKW.": RETU
RN
3235 PRINT "MXKWK HY G MDLLKZ WK
GAO RBW OBDWKYUGTK.": RETURN
3240 PRINT "MXKWK HY G WBTK RHJK
A MB MXK    NGMMZKFKLMY": RETURN

3245 PRINT "MXKWK HY G FBMBWUOUZ
K WGFT FGAK BR KGWMX.": RETURN
3250 PRINT "TKMKW HY CHVHLC G CW
KGM         TKWRBWFGLUK GY VKWG
ZOL GLA     SKKTHLC MXK CDGWAY A
HYMWGUMKA.": RETURN
3255 PRINT "MXKWK HY G AKGA AWGC
BL QHMX      G YGNWK NDWHKA HL HM
'Y UXKYM": RETURN
3260 PRINT "MBLO CKMY YMDUS ABQL
 MXK XBZK    GLA MXQGWMY MXK QXBZ
K KYUGTK.   OBD GWK GZZ UGTMDWKA
 GLA YXBM.": RETURN
3265 PRINT "XHT! XHT! XBBWGO. QK
'WK BL BDW  QGO. NO EBVK MXGM QG
Y G UZBYK   MXHLC BZA UXGT NDM O
BD FGLGCKA  MB UBFTZKMK OBDW FHY
YHBL KX QXGM": RETURN
3270 PRINT "MDM! MDM! YSHTTKW MX
GM'Y EDYM   LBM UWHUSKM, MXK BMX
KW UXGTY    XGVKL'M CBM BDM OKM.
": RETURN
3275 PRINT "'KGM XKWK' OBD FDYM
NK EBSHLC   YSHTTKW.": DRAW
3280 PRINT "H YGO YSHTTKW, MXGM'
Y G NHM      CWKKAO. KFKWCKLUO WG
MHBLY        KX QXGM!": RETURN
3285 PRINT "OBD UGL'M ADFFO MXK
MOWKY GWK   RZGM.": RETURN
3290 PRINT "MBLO HY XKWK UXGHLKA
 MB MXK QGZZMXK RHKLAHYX CDGWAY
BR UGYMZK   WGMXNBLK XGVK NKKL M
BWMDWHLC XHFNO YXBQHLC XHF VHAKB
Y BR UWKGF  UGSKY. XK HY XBQZHLC
 HL GCBLO   QHMX XDLCKW TGHLY.":
 RETURN
3295 PRINT "GZZ MXK FKL QKGWHLC
DLHRBWF GWK CDGWAY QBDZA OBD NKZ
HKVK!! GLA   MXKO'WK GZZ QGMUXHL
C WKWDLY BR  GDR-QHKAKWYKL TKM."
: RETURN
3300 PRINT "GZZ MXK CDGWAY GWK B
DM QGMUXHLC TKMK'Y YXBQ.": RETUR
N
3305 PRINT "OBD UGL'M MXKWK GWK
MBB FGLO     CDGWAY.": RETURN
```

Lines 3000-3305 These lines contain the encrypted messages printed out by the Spectrum.

```
3501 PRINT "MXGM'Y NKMMKW. LBM F
DUX NDM GM  ZKGYM OBD UGL YKK MX
K RHZMX GLA YIDGZBW MXGM YDWWBDL
AY OBD.     OBD'WK HL MXK KAHMBW
HGZ BRRHUK  GLA GZBLK, QXHUX FKG
LY HMY"
3502 PRINT "ZDLUXMHFK - MXBQCX H
M UBDZA      KIDGZZO NK FBWLNLC B
W GRMKWLBBL.OBD'VK NKKL RGYM GYZ
KKT - GZYB  LBM DLDYDGZ HL MXHY
BRRHUK.": RETURN
3510 PRINT "MXK KAHMBW'Y BRRHUK.
": RETURN
3520 PRINT "OBD'WK HL XGWWO MXK
XGUSKWY WBBFMXBDCX XK'Y LBQXKWK
MB NK YKKL."
3521 PRINT "MXKWK GWK CGFKY KVKW
OQXKWK, BL  MXK RZBBW, AKYS, UXG
HW, BL MBT  BR MXK ABBW......  B
DUX! MXKO"
3522 PRINT "QKWK BL MBT BR MXK A
BBW. VHYHNZKKJHMY ZKGA L,Y,K,Q.
MXKWK'Y GZYBGL HLVHYHNZK KJHM ND
M H QBDZAL'MQBWWO GNBDM HM GY OB
D UGL'M"
3523 PRINT "YKK HM. (HMY HLVHYHN
ZK ADFFO.)": RETURN
3530 PRINT "XGWWO MXK XGUSKW'Y
 BRRHUK.": RETURN
3540 PRINT "MXHY HY MXK UGYMZK S
HMUXKL. HM'YQGWF GLA YMKGFO - FD
YM NK MXK   TWHFKVGZ YBDT BL MXK
 YMBVK."
3542 PRINT "OBD YKK G TZGMK BR Y
GZFBLKZZG   GLA UDUDFNKW YGLAQHU
XKY QHMX G   YZDC MWGHZ ZKGAHLC
MB HM."
3544 PRINT "HM'Y XGWA MB MKZZ HR
 MXK YZDC   XGY KLMKWKA MXK YGWL
HKY, BW EDYMFGAK CBBA XHY KYUGTK
."
3545 PRINT "MXKWK'Y FBWK YBDT HL
 MXK YHLS   MXBDCX MXHY MHFK HM'
Y NKHLC DYKARBW MXK QGYXHLC DT."
: RETURN
3550 PRINT "MXK SHMUXKL.": RETUR
N
3560 PRINT "OBD GWK HL MXK UBFFG
LAGLM'Y      IDGWMKWY."
3562 PRINT "KVKWOMXHLC'Y HL G MK
WWHNZK FKYY NDM GM ZKGYM HM ABKY
L'M YFKZZ.  QKZZ MXK UBFFGLAGLM'
Y LBM BLK BRMXK WGLS GLA RHZK."
3563 PRINT "(GZMXBDCX XK ABKY XG
VK G 'TKL & HLS')"
3564 PRINT "BL XHY AKYS MXKWK HY
 G NHC FGU  GLA G MKZKTXBLK. MB
MXK YBDMX HYG QGWAWBNK.": RETURN
3570 PRINT "MXK UBFFGLAGLM'Y
 TWHVGMK IDGWMKWY.": RETURN
3580 PRINT "AB OBD BRMKL QGZS HL
MB BMXKW    TKBTZKY QGWAWBNKY?"
3582 PRINT "MXHY BLK'Y BNVHBDYZO
 MXK         UBFFGLAGLMY QHRK'Y G
Y HM'Y RDZZ BR XKW AWKYYKY GLA X
HCX XKKZKA  YXBKY."
3584 PRINT "GM ZKGYM QK TWKYDFK
HM'Y XHY    QHRK'Y (OBD LKVKW UG
L MKZZ MXKYKAGOY.)"
3586 RETURN
3590 PRINT "MXK UBFFGLAGLM'Y
 QGWAWBNK.": RETURN
3600 PRINT "OBD'VK EDYM RGZZKL H
L MXK        UBFFGLAGLMY YQHFFHLC
 TBBZ. OBD  LBMHUK MXGM MXKWK'Y
UXZBWHLK HL MXK QGMKW."
3602 PRINT "OBD QGVK NDM YXK ABK
YLM YKK OBD.": RETURN
3610 PRINT "MXK UBFFGLAGLM'Y TWH
VGMK YQHFFHLC TBBZ.": RETURN
3620 PRINT "OBD'WK HL G YFGZZ QG
ZZKA CGWAKL QHMX G QKZZ HL MXK U
KLMWK."
3622 PRINT "QXGM LB CLBFKY?"
3630 PRINT "MXK UGYMZK CGWAKLY."
: RETURN
3640 PRINT "OBD GWK HL MXK CDGWA
WBBF.": RETURN
3650 PRINT "MXK UGYMZK CDGWAWBBF
Y": RETURN
3660 PRINT "OBD'VK EDYM KLMKWKA
MXK TGWGAK  CWBDLA NDM ZDUSHZO R
BW OBD LB-  BLK'Y TGWGAHLC GM MX
K FBFKLM."
3662 PRINT "MXK QGZZ YDWWBDLAHLC
 MXK CWBDLA HY VKWO XHCX YB OBD
UGL RBWCKM  GNBDM MWOHLC MB UZHF
N HM.": RETURN
3670 PRINT "MXK TGWGAK CWBDLA.":
 RETURN
3680 PRINT "OBD GWK HL MXK CGWGC
K QXKWK MXK UBFFGLAGLM SKKTY XHY
 NWGLA        YTGLSHLC LKQ....."
3682 PRINT : PRINT "'QKZZ, HM'Y
G TKWS BR MXK EBN - QXGM A'OG FK
GL TGO RBW FO BQL   AHKYKZ, AHA
OBD SLBQ HM'Y CBM 72FHUWB-UXHTY
GLA MXGM'Y EDYM RBW MXK UHCGW ZH
CXMKW.              MGJ-AKADUMGN
ZK TGLPKW FS.JJHHH.'"
3684 PRINT : PRINT "QXGM A'OG FK
GL H'F EKGZBDY?     XBQ UGL G UB
FTDMKW CGFK NK      EKGZBDY, YMD
THA?": RETURN
3690 PRINT "MXK UGYMZK CGWGCK.":
 RETURN
3700 PRINT "MXK ZGWAKW OBD'VK ED
YM KLMKWKA  HY EGF-TGUSKA QHMX M
KFTMHLC      MGYMO FBWYKZY."
3702 PRINT "MXGM'Y TWBVHAHLC OBD
'WK KHMXKW  G UBUSWBGUX BW G WGM
, YMHZZ HM'YNKMMKW MXGL YUXBBZ A
HLLKWY H    YDTTBYK."
3704 PRINT "OBD CWGN G XGLARDZ B
R YDZMGLGY, KGM G RKQ GLA MXKL Q
GMUX GY MXK WKYM BR MXK TGUSKM Y
UDMMZKY BRR.": RETURN
3710 PRINT "MXK ZGWAKW.": RETURN

3720 PRINT "OBD WKGZZO GWK RBW M
XK XHCX EDFTHL XKWK. HM'Y MXK CO
F!! (L.N. LBEBSKY GNBDM NBN GLA
YHA TZKGYK)": RETURN
3730 PRINT "MXK COFLGYHDF.": RET
URN
3740 PRINT "OBD GWK HL MXK UGYMZ
K UGLMKKL.  MBAGO'Y MGZZO BR RBB
A TBHYBLHLC (YHU. KA) VHUMHFY XG
Y GZWKGAO   NKKL UGWMKA BRR GLA
MXKO'WK LBQ YKWVHLC MXK YKUBLA Y
HMMHLC.....MXK WGMY!!!": RETURN
3750 PRINT "MXK UGLMKKL.": RETUR
N
3760 PRINT "AGXZHLCY. UGXL'M OBD
 EDYM YFKZZ MXK CWKGYKTGHLM. HM'
Y GZZ MBB.  MBB AHVHLK."
```

NO ESCAPE!

```
3762 PRINT "QKZUBFK MB BDW XDFNZ
K MXKGMWK   RKZZBQ TMXRKYNHGLY."
: RETURN
3770 PRINT "MXK MXKGMWK.": RETUR
N
3780 PRINT "G FGPK BR YKUWKM TGY
YGCKY": RETURN
3790 PRINT "G FGPK BR YKUWKM TGY
YGCKY.": RETURN
3800 PRINT "OBD GWK HL G YFGZZ Y
KUWKM UBDWM-OGWA. HM'Y YB YKUWKM
 H AHAL'M   KVKL SLBQ HM QGY XKW
K GLA H     ABL'M SLBQ XBQ OBD C
KM BDM.": RETURN
3810 PRINT "G YKUWKM UBDWMOGWA."
: RETURN
3820 PRINT "        *
            OBD GWK UZHFNHLC/AKY
UKLAHLC G   ZBLC, ZBLC, ZBLC YTH
WGZ         YMGHWUGYK."
3821 PRINT "QBWL YFBBMX NO MXK M
WDACK,MWDACKMWDACK (OGQL,OGQL,OG
QL...NBWHLC HYL'M HM?) BR MXK DL
RBWMDLGMK   UGTMHVKY BR UGYMZK W
GMXNBLK BVKWUBDLMZKYY GKBLY, YHL
UK MHFK     HFFKFBWHGZ KMU,KMU."
3822 PRINT : PRINT "*"
3823 PRINT " AKZKMK GY GTTZHUGNZ
K, AKTKLAHLCBL MXK AHWKUMHBL OBD
 GWK UBFHLC RWBF/CBHLC MB."
3824 PRINT "(YKK UZGDYK HHH,YDN-
YKUMHBL 4,  TGWG.35 BR MXK YHLUZ
GHW 2010    TWBCWGFFHLC CDHAK)":
 RETURN
3830 PRINT "MXK YTHWGZ YMGHWUGYK
.": RETURN
3840 PRINT "OBD'VK EDYM KLMKWKA
GL HZZ-ZHM  MBQKW QHMX BLZO G UX
HLS BR ZHCXMUBFHLC MXWBDCX G YZH
M QHLABQ."
3842 PRINT "HL MXK AHF ZHCXM OBD
 UGL EDYM   FGSK BDM G UXGHW GLA
 MQB FBWK   ABBWY.": RETURN
3850 PRINT "MXK UGYMZK MBQKW.":
RETURN
3860 PRINT "QXB'Y GRWGHA BR MXK
NHC NGA     QDZR?"
3862 PRINT "QKZZ MXKWK'Y LB LKKA
 MB NK, UBY XHY XKGA HY XDLC BL
MXK QGZZ BR MXK MWBTXO WBBF."
3864 PRINT "XK'Y QKGWHLC MXGM YZ
HCXMZO      YMGWMZKA ZBBS MXGM Q
K GZZ CKM   QXKL YBFKBLK HY GNBD
M MB YXBBM  DY."
3866 PRINT "MXKWK'Y G MKZZO HL M
XK UBWLKW   YXBQHLC G TWBCWGF GN
BDM NHC     CGFK XDLMHLC.": RETU
RN
3870 PRINT "MXK MWBTXO WBBF GL K
JHM ZKGAY YBDMX": RETURN
3880 PRINT "OBD GWK HL G NKQHZAK
WHLC FGPK BR UBWWHABWY": RETURN
3890 PRINT "G NKQHZAKWHLC FGPK B
R UBWWHABWY.": RETURN
3900 PRINT "OBD'WK HL G ZBLC CGZ
ZKWO (HM'Y  GZFBYM GY ZBLC GY MX
K QGHM RBW  FO TGO UXKIDK) XDLC
QHMX MXK    TBWMWGHMY BR BZA FGY
MKWY."
3902 PRINT "MXKO ZBBS GZFBYM GY
UWDKZ GLA   XKGWMZKYY GY MXK RGU
KY BR OBDW  LKQ FGYMKWY."
3904 PRINT "MXKWK'Y GL BZA BGS A
BBW GM MXK  RGW KLA BR MXK CGZZK
WO.": RETURN
3910 PRINT "MXK ZBLC CGZKWO.": R
ETURN
3920 PRINT "OBD'WK LBQ HL MXK ZH
NWGWO BR    UGYMZK WGMXNBLK."
3922 PRINT "MXK YXKZVKY GWK CWBG
LHLC DLAKW  QKHCXM BR BR GZZ MXK
 NBBSY.     QKZZ, MWBDNZYXBBMHL
TKMK'Y NBBSYGWK XKWK GLA KVKWOBL
K CWBGLY GM MXKF."
3924 PRINT "OBD GZYB LBMHUK G ZK
VKW BL OBDW ZKRM.": RETURN
3930 PRINT "MXK UGYMZK WGMXNBLK
ZHNWGWO.": RETURN
3940 PRINT "MGSK OBD GWK LBQ KLM
KWHLC MXK   GMMHU, YB NKQGWK BR
GMHU GMGUY."
3942 PRINT "MXK WBBF HY NGWK KJU
KTM RBW MXK WKCDZGMHBL AKTMX BR
WBBR        HLYDZGMHBL, G UBZA Q
GMKW MGLS   GLA GL KJMWG ZGWCK Y
SOZHCXM.": RETURN
3950 PRINT "MXK GMHU.": RETURN
3960 PRINT "OBD GWK BL MXK NGMMZ
KFKLMY BR   MXK FBLYMBWBDY UGYMZ
K WGMXNBLK  QXKWK G UXHZZ QHLA N
ZBQY GLA    KVHZ YMGZSY HL MXK L
HCXM.": RETURN
3970 PRINT "MXK NGMMZKFKLMY.": R
ETURN
3980 PRINT "OBD'WK HL MXK UKZZGW
. MXK QGZZY GWK ZHLKA QHMX YBFK
BR MXK      RHLKYM QHLKY HL KDWB
TK. MXKWK'Y G MKYUB '77, G YGHLY
NDWO WKA    1984 GLA MXKWK'Y KVK
L G UXKKSO  ZHMMZK NKEBZZO GM GY
AG TWHUKY."
3990 PRINT "MXK YFKZZO UKZZGW.":
 RETURN
4000 PRINT "OBD'WK HL MXK ADLCKB
LY BR G 1000GAVKLMDWKY BLZO MXKW
K'Y YBFK    MXHLC G NHM BAA GNBD
M MXHY BLK  MXK SLHCXM RHCXMHLC
MXK AWGCBL  HY QKGWHLC G UWGYX X
KZFKM,"
4002 PRINT "GLA XK ZBBSY GY HR X
K UBDZA AB  QHMX YBFK XKZT.": RE
TURN
4010 PRINT "MXK AGWS AGLS ADLCKB
LY.": RETURN
4020 PRINT "MXHY TZGUK HY MXK TH
MY FGL GLA  TKMK'Y DYDGZZO HL HM
 (GY BTTBYKAMB NKHLC HL YBFKMXHL
C MXGM      WXOFKY QHMX THM)."
4022 PRINT "GY DYDGZ XK'Y XGWA G
M QBWS      TZGOHLC FGLHU FHLKW.
": RETURN
4030 PRINT "TKMK'Y THM.": RETURN

4040 PRINT "GGGGGGGGGGGWWWWCCXX!
!!"
4042 PRINT "MXGM'Y NKMMKW. H XGA
 G RWBC HL  FO MXWBGM. HLUHAKLMZ
O BZA UXGT  H QBDZAL'M QHYX MB Q
BWWO OBD    LKKAZKYYZO NDM MXHY
HY MXK      MBWMDWK UXGFNKW GLA
MXKWK'Y     LBMXHLC H LKKA ZKYY
MXGL THGLB  ZKYYBLY QKGWHLC MXDF
NYUWKQY.": RETURN
4050 PRINT "MXK MBWMDWK UXGFNKW.
": RETURN
4060 PRINT "HM'Y YB XBM GLA YMKG
FO HL XKWK  OBD UGL'M YKK G MXHL
C MXHY FDYM NK MXK ZGDLAWO.": RE
TURN
4070 PRINT "MXK ZGDLAWO.": RETUR
N
4080 PRINT "OBD GWK GM MXK NBMMB
F BR MXK    QKZZ. OBD RKKZ G AWG
DCXM NZBQHLCGUWBYY OBDW RGUK NDM
 HM'Y AGWS  YB OBD UGL'M YKK QXK
WK OBD'WK   CBHLC.": RETURN
4090 PRINT "OBD GWK GM MXK NBMMB
F BR MXK    QKZZ.": RETURN
```

Lines 3501-4090 These lines contain the encyrpted location descriptions.

```
9000 REM **** SET UP ARRAYS ***
9002 LET ACTION=109
9005 LET STATUS=15
9010 LET LOCATE=30
9015 LET WORDS=105
9020 LET TNOBS=25: LET NOBJ=0
9025 LET LOCAL=1
9030 DIM E$(ACTION,40): REM EVEN
T TABLE
9035 DIM S$(STATUS+1,16): REM ST
ATUS TABLE
9040 DIM L$(LOCATE,24): REM LOCA
TION CONNECTIONS
9045 DIM D$(WORDS,6): REM DICTIO
NARY
9050 DIM O$(TNOBS,32): REM OBJEC
T DESCRIPTIONS
9055 DIM V(LOCATE)
9060 DIM O(TNOBS): REM OBJECT LO
CATIONS
9065 DIM F(21): DIM C(10)
9066 LET F(1)=1
9067 LET F(3)=1
```

Lines 9000-9067 This sets up the size of the various tables.

```
9070 REM **** EVENT TABLE *****
9075  FOR N=1 TO ACTION
9080 READ X$: LET E$(N)=X$
9085 NEXT N
9086 DATA "0100101601*G02E*"
9087 DATA "0300122511*G23E*"
9088 DATA "0400108519*G09E*"."04
00108619*A62D*"
9099  DATA "1320219*H19B*","1338
214*H14B*"
9100 DATA "1334201*H01B*","13232
02*H02B*"
9101 DATA "1322215*H15B*","13222
16*H16B*","1332204*H04B*"
9102 DATA "1335205*H05B*","13362
08*H08B*"
9103 DATA "1330217*H17B*","13182
11*H11B*"
9104 DATA "1319128503*H10N03B*",
"1319210*H10B*","1337213*H13B*"
9105 DATA "1339203*H03B*","13392
25*H25B*","1372122221*M11A24K21D
*"
9106 DATA "1376220*H20B*","13312
12*H12B*","1321206*A58D*","13212
07*H07B*"
9107 DATA "1387218*H18D*"
9119  DATA "1420419*I19B*","1438
414*I14B*"
9120 DATA "1434401*I01B*","14234
02*I02B*"
9121 DATA "1422415*I15B*","14224
16*I16B*","1432404*I04B*"
9122 DATA "1435405*I05B*","14364
08*I08B*"
9123 DATA "1430417*I17B*","14184
11*I11B*"
9124 DATA "1419410*I10B*","14374
13*I13B*"
9125 DATA "1431412*I12B*","14384
14*I14B*"
9126 DATA "1439403*I03B*","14394
25*I25B*","1476420*I20D*","14214
07*I07B*"
9127 DATA "1487418*I18D*"
9129 DATA "1500111609*A09J15D*",
"1563110*A15D*","1500119314*J14E
*"
9130 DATA "1500101601*A05D*","15
64107*A12D*","1565610*A16J06D*"
9131 DATA "1569118608*A18D*","15
69118508*A20D*"
9132 DATA "1574123*A25D*","15361
12*A17D*"
9133 DATA "1500126520*A52D*","15
00*E*"
9134 DATA "1617101501*N01E*","16
73123612*M12A28D*"
9138 DATA "2526104*A01D*"
9139 DATA "2600101621*A30M21D*",
"2600101*A46D*","2600114*A40D*",
"2600108*A41D*","2600129*A42D*",
"2600115*A43D*","2600123*A44D*"
9141 DATA "2600*A45D*"
9142 DATA "2728123202216201507*J
09K02K16E*","2748109225*A32K25M1
7D*"
9144 DATA "2930217*L17E*","29871
24218*M18E*"
9146 DATA "3118114211204*A37M19D
*"
9150 DATA "3549205206*L06E*"
9160 DATA "4041104*A01B*"
9161 DATA "4388114211204*A37M19I
11I04D*","4419215210*A33L15D*"
9162 DATA "4546116212*A31J24K12M
16D*"
9163 DATA "4737213*M07A23D*"
9165 DATA "5152126214*A38J22H22D
*","5152126314*A39Q*"
9170 DATA "5455122*A04A22J21J13B
*"
9172 DATA "5657101*A06Q*","56621
04*A10D*","5622215*A57D*","56001
13*A56D*"
9174 DATA "5880101*A07D*"
9185 DATA "6100111609*A09J15D*",
"6100101601*A05D*","61119314*J14
E*"
9187 DATA "6764107*A14G30E*"
9189 DATA "6863110*A15D*","68656
10*A16J06D*","6836112*A17D*"
9190 DATA "7071118608*M08B*","70
71118508*A27D*"
9191 DATA "8200*F*","8384119*A21
D*"
9194 DATA "7576220*A20Q*","79191
28503*J10N03B*"
9195 DATA "85181235135142095122 1
1*A36M15K11K09D*"
9196 DATA "8520109219207222517*A
34K19K07K22M13D*","8519124518210
513*A35K0M14D*"
9197 DATA "8519116516210*A53Q*",
```

```
"B5001165165135l4515*A54Q*","B50
0116516*A55D*"
9198 DATA "B687124218*M18B*"
9199 DATA "8939116224203*K24K03J
25E*"
```

Lines 9070-9199 This sets up the events/action table.

```
9200 REM ***** STATUS TABLE ****
9210 FOR N=1 TO STATUS
9220 READ X$: LET S$(N)=X$
9230 NEXT N
9240 LET S$(N)="*D*": LET STATUS
=STATUS+1
9250 DATA "123512*A28D*","101501
*A03D*"
9252 DATA "118508*A19D*","122511
*A29D*"
9254 DATA "116516*A48D*","124518
*A49D*","109517*A50D*"
9256 DATA "114519*A51D*","126520
*A52D*"
9268 DATA "128503*A59D*","117508
*NO8D*","119508*NO8D*","124508*N
O8D*"
9270 DATA "108619*A60D*","108519
*A61D*"
```

Lines 9200-9270 This sets up the status table.

```
9300 REM ***** LOCATIONS CONNECT
IONS ******
9310 FOR N=1 TO LOCATE
9320 READ X$
9330 LET L$(N)=X$
9340 NEXT N
9345 DATA "00","0112020103170403
00"
9347 DATA "0111030204070O","0107
0205040600"
9349 DATA "010400","030400"
9350 DATA "011002040303040800","
030700"
9352 DATA "030800","020700"
9354 DATA "020300","0113020200"
9356 DATA "02120315041400","0313
00"
9358 DATA "011502150315041300","
041500"
9360 DATA "04020518062500","0119
03200524061700"
9362 DATA "021800","012002200321
041900"
9364 DATA "0322042000","042100"
9366 DATA "042200","061800"
9368 DATA "02260329051700","0125
03280427"
9370 DATA "032600","0129042600"
9372 DATA "0228042500","011600"
```

Lines 9300-9372 Contains the data for the connections between the locations.

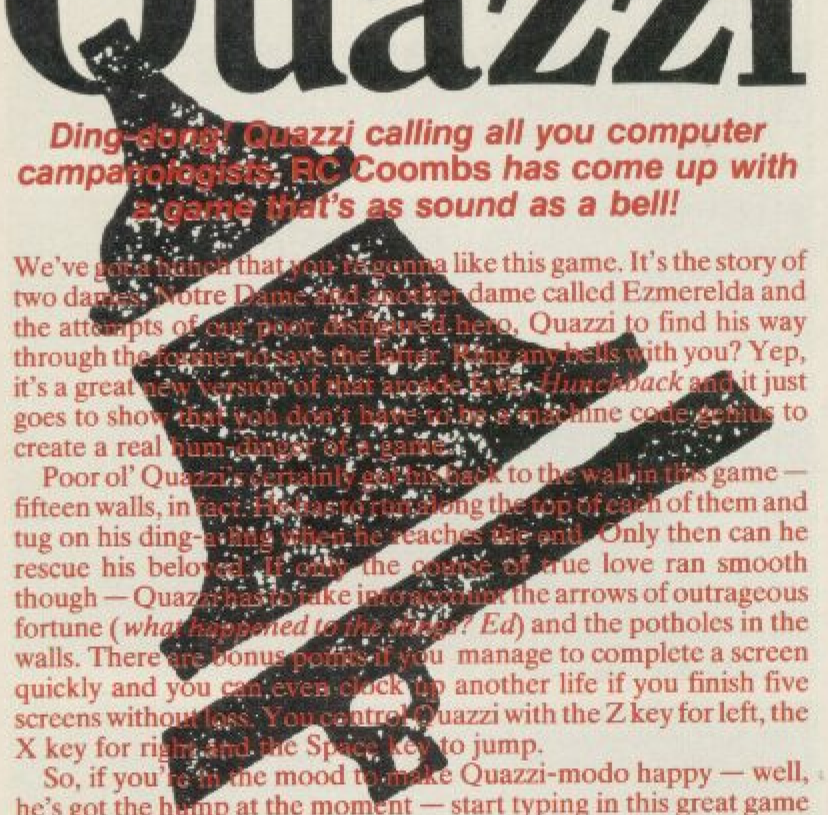
```
9400 REM ***** DICTIONARY ******
9410 FOR N=1 TO WORDS
9420 READ X$: LET D$(N)=X$
9430 NEXT N
9440 DATA "01NORT","01N","02SOUT
","02S","03EAST","03E","04WEST",
"04W","05UP","05U","06DOWN","06D
"
9450 DATA "13TAKE","13GET","13GE
T ","14DROP","14LEAV","15LOOK"
9452 DATA "68EXAM","16OPEN","17E
YES","18PETE","19TONY","20ROGE"
9454 DATA "21MOTO","21BIKE","22B
OX","22CORN","23SQUE"
9456 DATA "24TELE","25CALL","26H
ELP","27BUIL","27MAKE","28PLAN"
9458 DATA "29TIE","30SHEE","31MA
NI","31MINE","32DRES","32SEXY","
34JET","34PAC","35PUMP"
9460 DATA "36VAUL","36HORS","37B
LUE","37BOOK","38SABR","39SACK"
9462 DATA "40USE","41PHON","42HE
LP","43GIVE","44FEED","45DIG","4
6HOLE"
9464 DATA "47READ","48RAMP","49T
YRE","50RIDE","51KILL","52DRAG",
"54PULL","55LEVE"
9466 DATA "56EAT","56EAT","57SAR
N","58TYPE","59GAME","60TURK","6
1SEAR","62BIG","62MAC","63PANZ",
"64WELL","65GARA"
9468 DATA "66ROOM","67GO  ","67E
NTE","68EXAM","69CHIN","70CLIM",
"71CHAI","72MANU","73SKYL","74TA
NK","75DRIN"
9470 DATA "76WINE","77SQUE","78H
ELM","79FREE","80MESS","81LARD"
9472 DATA "82INVE","82STAT","83W
ATC","84TELL","85ESCA","86FIX","
87ROPE"
9474 DATA "88SHOW","88PERF","89F
ILL","90QUIT"
```

Lines 9400-9474 This is the dictionary of commands used in the program.

```
9500 REM **** OBJECTS ****
9510 FOR N=1 TO TNOBS
9520 READ X$,X
9530 LET O$(N)=X$: LET O(N)=X
9540 NEXT N
9550 DATA "A JET PAC CARTRIDGE",
2,"A SQUEEZY BOTTLE",3
9552 DATA "A CANVAS SACK",11,"A
SEXY DRESS",5,"A PUMP",6
9554 DATA "A MOTORBIKE WITH FLAT
 TYRES",10,"A MOTORBIKE",0
9556 DATA "A HORSE",12,"A HOME M
ADE PLANE",0
9558 DATA "BIG TONY SAMUELS",0,"
TROUBL'SHOOTIN' PETE",27,"THE MA
NIC MINER HIMSELF",27
9560 DATA "A BLUE PETER BOOK",0,
"SABREWULFE'S SABRE",19
9562 DATA "A BOX OF CORNFLAKES",
11,"A EMPTY CORNFLAKES BOX",0
9564 DATA "A PILE OF SHEETS",29,
"A ROPE MADE OF SHEETS",0
9566 DATA "ROGER WILLIS",24,"A B
OTTLE CHATEAU COLLAPSO",25,"AN O
LD MANUSCRIPT",0,"A MOTOR CYCLE
HELMET",0,"A SHOVEL",6
9568 DATA "A PILE OF EARTH",0,"A
 SACK FULL OF EARTH",0
9700 RETURN
```

Lines 9500-9700 This contains the list of objects in the program.

Quazzi



Ding-dong! Quazzi calling all you computer campanologists. RC Coombs has come up with a game that's as sound as a bell!

We've got a hunch that you're gonna like this game. It's the story of two dames, Notre Dame and another dame called Ezmerelda and the attempts of our poor disfigured hero, Quazzi to find his way through the former to save the latter. Ring any bells with you? Yep, it's a great new version of that arcade fave, *Hunchback* and it just goes to show that you don't have to be a machine code genius to create a real hum-dinger of a game.

Poor ol' Quazzi's certainly got his back to the wall in this game — fifteen walls, in fact. He has to run along the top of each of them and tug on his ding-a-ling when he reaches the end. Only then can he rescue his beloved. If only the course of true love ran smooth though — Quazzi has to take into account the arrows of outrageous fortune (*what happened to the slings? Ed*) and the potholes in the walls. There are bonus points if you manage to complete a screen quickly and you can even clock up another life if you finish five screens without loss. You control Quazzi with the Z key for left, the X key for right and the Space key to jump.

So, if you're in the mood to make Quazzi-modo happy — well, he's got the hump at the moment — start typing in this great game now. It won't make you deaf, you know!

This program is available on Digi'T'ape

```
10 REM     -------------
20 REM      Q U A Z Z I
30 REM     -------------
40
50 REM R.C.COOMBS MARCH 1985
60
70 POKE 23658,8
80 GO TO 9500
```

Lines 10-80 Switch Caps Lock on and then jump to the game initialisation routines.

```
90
100 REM INITIALIZE VARIABLES
110
190 LET bonus=0: LET sc=0: LET l=5
220 LET a=7: LET b=0
250 LET sh=1
260 LET ju=-1
270 LET jump=0
290 LET ar=0: LET d=30
300 LET ar2=0: LET e=26
310 LET move=0
320 LET f1=1: LET f=5
330 LET tb=101
340 LET men=0: LET m1=1: LET m2=0: LET m3=1
350 LET p=0
500 GO SUB 8000
```

Lines 90-500 This part of the code sets up the initial variables and game status flags.

```
990
1000 REM MAIN ROUTINE
1010
1020 PRINT AT a,b;"  ";AT a+1,b;"  ";AT a+2,b;"
"
1030 LET b=b+(IN 65278=187 OR IN 65278=251)-((IN
65278=189 OR IN 65278=253) AND b>0)
1040 IF ATTR (a+3,b)=67 THEN  GO SUB 4000
1070 IF p=1 THEN  PRINT AT a,b;"▞▚";AT a+1,b;"▛▜
";AT a+2,b;"▞▚"
1075 IF p=0 THEN  PRINT AT a,b;"▞▚";AT a+1,b;"▛▜
";AT a+2,b;"▞▚"
1076 IF IN 65278=187 OR IN 65278=251 OR IN 65278=
189 OR IN 65278=253 THEN  LET p=p+1: IF p=2 THEN
 LET p=0
1077 IF IN 65278<>187 AND IN 65278<>251 AND IN 65
278<>189 AND IN 65278<>253 THEN  LET p=0
1080 IF b=24 AND sh=15 THEN  GO TO 5000
1090 IF b=29 THEN  GO TO 2000
1100 IF jump=0 AND (IN 32766=190 OR IN 32766=254)
 THEN  LET jump=1
1110 IF jump=1 THEN  GO SUB 1800
1120 IF ar=1 THEN  GO SUB 1900
1130 IF ar2=1 THEN  GO SUB 2800
1140 IF move=1 THEN  GO SUB 2900
1150 IF men=1 THEN  GO SUB 3000
1740 IF tb>0 THEN  LET tb=tb-1: PRINT AT 0,26;tb;
" "
1750 IF ATTR (a,b)=69 OR ATTR (a,b+1)=69 OR ATTR
(a+1,b)=69 OR ATTR (a+1,b+1)=69 OR ATTR (a+2,b)=6
9 OR ATTR (a+2,b+1)=69 THEN  GO SUB 4000
1770 OUT 254,0: OUT 254,16
1780 GO TO 1000
```

Lines 990-1780 This is the main game routine. The keyboard is scanned using IN so that more than one key can be read at one time.

```
1790
1800 REM JUMP
1810
1820 PRINT AT a,b;"  ";AT a+1,b;"  ";AT a+2,b;"
": LET a=a+ju
1830 IF a=5 THEN  LET ju=1
1840 IF a=7 THEN  LET jump=0: LET ju=-1
1850 PRINT AT a,b;"▞▚";AT a+1,b;"▛▜";AT a+2,b;"▞▚
"
1860 RETURN
```

Lines 1790-1860 This routine prints Quazzi in a jumping position.

```
1890
1900 REM ARROW1
1910
1920 LET d=d-1: IF d=0 THEN  LET d=31: PRINT AT 8
,0;"  "
1930 PRINT AT 8,d; INK 5;"←"; INK 7;" "
1940 RETURN
```

Lines 1890-1940 This part of the program prints the left moving arrow.

```
1990
2000 REM RING BELL NEW WAVE
2010
2020 BEEP .25,5: BEEP .175,2: LET sc=sc+tb: LET t
b=101
2030 LET bonus=bonus+1: IF bonus=5 THEN  GO SUB 2
700
2040 LET jump=0: LET ju=-1: LET sh=sh+1: GO SUB 8
000
2050 LET a=7: LET b=0: FOR n=1 TO bonus: PRINT AT
 1,n*2; INK 6;"♣": NEXT n
2060 LET e=26: LET d=31
2480 GO TO 1000
```

Lines 1990-2480 When Quazzi has completed a screen this routine is called to ring the bell and make ready for the next screen.

```
2690
2700 REM EXTRA LIFE
2710
2720 PRINT AT 1,bonus*2; INK 6;"♣";AT 2,0; FLASH
 1; OVER 1; INK 8; PAPER 1;"                ";AT 3,0; IN
VERSE 1;"            ": FOR n=1 TO 200: NEXT n: FOR
m=1 TO 5: BEEP .01,1: BEEP .01,2: PRINT AT 1,12-(
m*2); FLASH 1; OVER 1;" ": FOR n=1 TO 8: LET sc=s
c+n*n: PRIN
T AT 21,26;sc: BEEP .1/n,n: NEXT n: NEXT m
2730 LET l=l+1
2740 LET bonus=0
2750 RETURN
```

Lines 2690-2750 This subroutine gives you an extra life once you enter the fifth screen without dying.

```
2790
2800 REM ARROW2
2810
2820 LET e=e+2: IF e=28 THEN  LET e=0: PRINT AT 6
,28;"  "
2830 PRINT AT 6,e; INK 5;"  →"
2880 RETURN
```

Lines 2790-2880 This prints the right moving arrow.

```
2890
2900 REM MOVING PLATFORMS
2910
2920 LET f=f+f1: IF f=12 THEN  LET f1=-1
2930 IF f=6 THEN  LET f1=1
2940 PRINT AT 10,f; INK 3;" "; INK 5;"▀▀▀▀"; INK
3;" ";AT 10,f+5;" "; INK 5;"▀▀▀▀"; INK 3;" ";AT 1
0,f+10;" "; INK 5;"▀▀▀▀"; INK 3;" "
2950 RETURN
```

Lines 2890-2950 This prints the moving platforms.

```
2990
3000 REM MOVE MEN
3010
3020 INK 5: IF m1=1 AND RND<.15 THEN  LET m1=0: P
RINT AT 11,17;"↑";AT 14,17; OVER 1;"|"
3021 IF m1=0 AND RND<.15 THEN  LET m1=1: PRINT AT
 11,17;"|";AT 14,17;"Π"
3022 IF m2=1 AND RND<.15 THEN  LET m2=0: PRINT AT
 11,24;"|";AT 14,24; OVER 1;"|"
3023 IF m2=0 AND RND<.15 THEN  LET m2=1: PRINT AT
 11,24;"!";AT 14,24;"Π"
3024 IF m3=1 AND RND<.15 THEN  LET m3=0: PRINT AT
 11,10;"↑";AT 14,10; OVER 1;"|"
3025 IF m3=0 AND RND<.15 THEN  LET m3=1: PRINT AT
 11,10;"|";AT 14,10;"Π"
3030 IF m2=1 THEN  PRINT AT 10,24;"|";AT 9,24;"|
";AT 8,24;"↑"
3040 IF m3=1 THEN  PRINT AT 10,10;"|";AT 9,10;"|
";AT 8,10;"↑"
3050 INK 7: IF m2=0 THEN  PRINT AT 10,24;" ";AT 9
,24;" ";AT 8,24;" "
```

```
3070 IF m3=0 THEN  PRINT AT 10,10;" ";AT 9,10;" "
;AT 8,10;" "
3080 IF m1=1 THEN  PRINT AT 10,17; INK 5;"I";AT
9,17;"I";AT 8,17;"↑"
3090 IF m1=0 THEN  PRINT AT 10,17;" ";AT 9,17;" "
;AT 8,17;" "
3100 RETURN
```

Lines 2990-3100 This routine prints and moves the guards.

```
3990
4000 REM DIE
4010
4020 FOR n=a TO 15: PRINT AT n,b; INK 5;"  ";AT
n+1,b;"  ";AT n+2,b;"  "; INK 7;AT n-1,b;"  "; B
EEP .01,-n: NEXT n
4030 BEEP .1,-20: FOR n=1 TO 100: NEXT n: LET l=l
-1: IF l=0 THEN  GO TO 9000
4040 FOR n=1 TO 100: NEXT n: GO SUB 8000
4050 LET jump=0: LET ju=-1: LET a=7: LET bonus=0:
 LET b=0
4060 LET e=26: LET d=31
4980 RETURN
```

Lines 3990-4980 When you have been killed this routine is called to tell you the bad news and then update the variables.

```
4990
5000 REM CONGRATULATIONS
5010
5020 FOR n=40 TO 60: BEEP .01,n: NEXT n
5030 FOR n=a TO a-4 STEP -1: PRINT AT n,b;"  ";A
T n+1,b;"  ";AT n+2,b;"  ";AT n+3,b;" 3": FOR m=
1 TO 30: NEXT m: PRINT AT n,b;"  ";AT n+1,b;"  "
;AT n+2,b;"  ": FOR m=1 TO 20: NEXT m: NEXT n
5040 PRINT AT 4,b;" 3";AT 2,b;"  ";AT 3,b; INK 6
;"  ": FOR n=b+2 TO 28: PRINT AT 2,n;"  ";AT 3,
n;"  ": FOR m=1 TO 30: NEXT m: NEXT n: PRINT AT
3,30;"  "
5050 FOR n=0 TO 7: BEEP .1,1+n: BEEP .1,3+n: BEEP
 .1,5+n: NEXT n: BEEP .2,0
5060 FOR n=1 TO 1000 STEP 100: OUT 254,0: OUT 254
,16: LET sc=sc+n: PRINT AT 21,26;sc: NEXT n
5070 FOR n=1 TO 200: NEXT n
5080 GO TO 200
```

Lines 4990-5080 This is the final screen routine for when you manage to save Ezmerelda.

```
7990
8000 REM PRINT NEW SCREEN
8010
8020 CLS
8030 PRINT AT 2,0; INK 5;"S U P E R";AT 3,0; INK
7;"B O N U S"
8040 PRINT AT 0,0; INK 2; PAPER 7;"              
"
8050 PRINT AT 0,15; INK 4;"TIME BONUS:"
8070 FOR n=10 TO 19: PRINT AT n,0; INK 2; PAPER 7
;"                                ": NEXT n
8080 FOR n=4 TO 8: PRINT AT n,30;"3": NEXT n: PR
INT AT 3,30; INK 6;"  ";AT 21,0; PAPER 0;"LIVES:"
; INK 7;l; INK 6;TAB 11;"SHEET:"; INK 7;sh; INK 6
;TAB 20;"SCORE:"; INK 7;sc
8090 GO TO 8050+(sh*50)
```

Lines 7990-8090 This prints the standard background for all the screens.

```
8100 LET ar2=1: RETURN
```

Line 8100 Info for Screen 1

```
8150 LET ar=1: LET ar2=0
8160 RETURN
```

Lines 8150-8160 Info for Screen 2

```
8200 LET ar=0: FOR n=10 TO 14: PRINT AT n,9; INK
3;"  "; INK 7;"  ";AT n,16; INK 3;"  "; INK 7;"  "
;AT n,23; INK 3;"  "; INK 7;"  ": NEXT n: PRINT A
T 10,11;"  ";AT 10,18;"  ";AT 10,25;"  "
8220 RETURN
```

Lines 8200-8220 Info for Screen 3

```
8250 FOR n=10 TO 14: PRINT AT n,9; INK 3;"  "; IN
K 7;"  ";AT n,16; INK 3;"  "; INK 7;"  ";AT n,23;
INK 3;"  "; INK 7;"  ": NEXT n: PRINT AT 10,11;"  
";AT 10,18;"  ";AT 10,25;"  "
8260 LET ar=1
8270 RETURN
```

Lines 8250-8270 Info for Screen 4

```
8300 LET ar=1: LET ar2=1
8310 RETURN
```

Lines 8300-8310 Info for Screen 5

```
8350 FOR n=10 TO 14: PRINT AT n,9; INK 3;"  "; IN
K 7;"  ";AT n,16; INK 3;"  "; INK 7;"  ";AT n,23;
INK 3;"  "; INK 7;"  ": NEXT n: PRINT AT 10,11;"  
";AT 10,18;"  ";AT 10,25;"  "
8360 LET ar=1: LET ar2=1
8370 RETURN
```

Lines 8350-8370 Info for Screen 6

```
8400 FOR n=10 TO 17: PRINT AT n,6; INK 3;"
               "; INK 7;"  ": NEXT n: PRINT AT 10,
27;"  "
8410 PRINT AT 10,8; INK 2; PAPER 7;"     ";AT 10,
14;"      ";AT 10,22;"     "
8420 LET ar=0: LET ar2=0
8430 RETURN
```

Lines 8400-8430 Info for Screen 7

```
8450 LET move=1: FOR n=10 TO 17: PRINT AT n,6; IN
K 3;"                 "; INK 7;"  ": NEXT n:
PRINT AT 10,27;"  "
8460 RETURN
```

Lines 8450-8460 Info for Screen 8

```
8500 FOR n=10 TO 17: PRINT AT n,6; INK 3;"
               "; INK 7;"  ": NEXT n: PRINT AT 10,
27;"  "
8510 PRINT AT 10,8; INK 2; PAPER 7;"     ";AT 10,
14;"       ";AT 10,22;"     "
8520 LET move=0: LET ar=0: LET ar2=1
8530 RETURN
```

Lines 8500-8530 Info for Screen 9

```
8550 FOR n=10 TO 14: PRINT AT n,9; INK 3;"  "; IN
K 7;"  ";AT n,16; INK 3;"  "; INK 7;"  ";AT n,23;
INK 3;"  "; INK 7;"  ": NEXT n: PRINT AT 10,11;"  
";AT 10,18;"  ";AT 10,25;"  "
8560 LET m1=0: LET m2=0: LET m3=0: LET men=1: LET
 ar2=0: PRINT AT 12,10; INK 5;"  ";AT 13,10;"  ";A
T 12,17;"  ";AT 13,17;"  ";AT 12,24;"  ";AT 13,24;"  
";AT 14,10;"Π";AT 14,24;"Π";AT 14,17;"Π";AT 11,1
0;"↑";AT 11,24;"↑";AT 11,17;"↑"
8570 RETURN
```

Lines 8550-8570 Info for Screen 10

```
8600 LET ar=0: LET ar2=1: LET men=0: LET move=1:
FOR n=10 TO 17: PRINT AT n,6; INK 3;"
          "; INK 7;"  ": NEXT n: PRINT AT 10,27;"  
"
8610 RETURN
```

Lines 8600-8610 Info for Screen 11

```
8650 LET ar2=1: FOR n=10 TO 17: PRINT AT n,6; INK
 3;"                    "; INK 7;"  ": NEXT n: P
RINT AT 10,27;"  "
8660 PRINT AT 10,8; INK 2; PAPER 7;"     ";AT 10,
14;"       ";AT 10,22;"     "
8670 LET move=0: LET ar=1: LET ar2=1
8680 RETURN
```

Lines 8650-8680 Info for Screen 12

```
8700 FOR n=10 TO 14: PRINT AT n,9; INK 3;"  "; IN
K 7;"  ";AT n,16; INK 3;"  "; INK 7;"  ";AT n,23;
INK 3;"  "; INK 7;"  ": NEXT n: PRINT AT 10,11;"  
";AT 10,18;"  ";AT 10,25;"  "
8710 LET m1=0: LET m2=0: LET m3=0: LET men=1: PRI
NT AT 12,10; INK 5;"  ";AT 13,10;"  ";AT 12,17;"  "
;AT 13,17;"  ";AT 12,24;"  ";AT 13,24;"  ";AT 14,10
;"Π";AT 14,24;"Π";AT 14,17;"Π";AT 11,10;"↑";AT 1
1,24;"↑";AT 11,17;"↑"
8720 RETURN
```

Lines 8700-8720 Info for Screen 13

```
8750 LET ar2=1: FOR n=10 TO 14: PRINT AT n,3; INK
 3;"                      "; INK 7;"  ": NEXT n:
PRINT AT 10,25;"  "
8760 LET m1=0: LET m2=0: LET m3=0: LET men=1: PRI
NT AT 12,10; INK 5;"  ";AT 13,10;"  ";AT 12,17;"  "
;AT 13,17;"  ";AT 12,24;"  ";AT 13,24;"  ";AT 14,10
;"Π";AT 14,24;"Π";AT 14,17;"Π";AT 11,10;"↑";AT 1
1,24;"↑";AT 11,17;"↑"
8770 PRINT AT 10,5; INK 2; PAPER 7;"     ";AT 10,
12;"     ";AT 10,19;"     "
8780 RETURN
```

Lines 8750-8780 Info for Screen 14

```
8800 FOR n=5 TO 10: PRINT AT n,26; INK 2; PAPER 7
;"      ": NEXT n: PRINT AT 4,27; INK 2; PAPER 7
;"     "; PAPER 0; INK 6;AT 2,30;"  ";AT 3,30; I
NK 7;"  ";AT 2,25; INK 2; PAPER 7; FLASH 1;"HELP
"
8810 FOR n=10 TO 17: PRINT AT n,22; INK 3;"  ";
 INK 7;"  ";AT n,3; INK 3;"  "; INK 7;"  ";AT n,9;
 INK 3;"  "; INK 7;"  ";AT n,16; INK 3;"  "; INK
7;"  ": NEXT n: PRINT AT 10,18;"  ";AT 10,5;"  ";AT
 10,11;"  ";AT 4,26;"  "
8820 LET ar=0: LET ar2=0: LET move=0: LET men=0:
FOR n=4 TO 10: PRINT AT n,25;"3": NEXT n: PRINT
AT 3,25; INK 6;"  ": RETURN
```

Lines 8800-8820 Info for Screen 15

```
8990
9000 REM END OF GAME
9010
9020 FOR n=14 TO 0 STEP -1: BORDER n/2: BEEP .01,
n: BEEP .01,n-1: BEEP .1,n-2: NEXT n
9030 FOR m=1 TO 10: FOR n=1 TO 5: OUT 254,0: OUT
254,16: PRINT AT 5,6; INK n;"               
  "
9040 PRINT AT 6,6; INK n+1;"                  
```

```
"
9050 PRINT AT 7,6; INK n+2;"[illegible]
"
9060 NEXT n
9070 NEXT m
9080 FOR n=20 TO 10 STEP -1: PRINT AT n,0; PAPER
5;"                                ";AT (21-n),0;
"                                ";AT n+1,0; PAPE
R 0;"                              ";AT (20-n),
0;"                                ": NEXT n
9090 PRINT AT 0,1;"[illegible]";AT 1,1;"[illegible]
[illegible]";AT 2,1;"[illegible]";AT 3,1;"[illegible]
[illegible]";AT 13,0; INK 0; PAPER 5;"PRESS: 'I'-INSTRUCT
IONS, 'P'-PLAY "
9100 FOR n=0 TO 7: PRINT AT n+5,0; PAPER n;"
                                ";AT 21-n,0;"
                                ": NEXT n
9110 PRINT AT 1,13; R.C.COOMBS [1985]"
9120 IF INKEY$="I" THEN  GO TO 9800
9130 IF INKEY$="P" THEN  GO TO 100
9140 GO TO 9120
```

Lines 8990-9140 Info for the 'End of game' routine.

```
9490
9500 REM SET UP GRAPHICS
9510
9520 BORDER 0: INK 7: BRIGHT 1: PAPER 0: CLS
9530 PRINT  INK 5;"[illegible]
[illegible]"
9540 PRINT AT 10,5; RICHARD COOMBS [1985]"
9600 RESTORE : FOR n=0 TO (21*8)-1
9610 READ a: POKE USR "a"+n,a: NEXT n
9620 GO TO 9800
```

Lines 9490-9620 This prints up the main title screen.

```
9690
9700 REM CLEAR SCREEN & WAIT
9710
9720 FOR n=1 TO 100: NEXT n
9730 IF INKEY$="" THEN  GO TO 9730
9740 FOR n=9 TO 21: PRINT AT n,0;"_______________
_________________";AT n,0;"
                                ": NEXT n
9750 RETURN
```

Lines 9690-9750 This routine clears part of the screen after a key has been pressed.

```
9790
9800 REM INSTRUCTIONS
9805
9810 CLS : PRINT TAB 10; INK 2; PAPER 6;"Q U A Z
Z I"
9820 PRINT AT 3,0;"[illegible]"''"[illegible]"''"[illegible]"
9830 PRINT '''"Help QUAZZI reach his true  love"'
'"EZMERALDA who  has  been  locked"''"away  by th
e  evil  guards......"
9840 PRINT '"You must brave the tops  of  the"''"
castle walls,dice with death and"''"clear 15 scre
ens to reach her..."
9850 PRINT )0; INK 1; PAPER 7;" PRESS  ANY  KEY
TO  CONTINUE "
9860 GO SUB 9700
```

Lines 9790-9860 Page one of the instructions.

```
9880 PRINT AT 9,0;"Points will be awarded for doi
ng"''"a screen  quickly  and  a  SUPER"''"BONUS w
ill be  awarded  if  five"''"consecutive  screens
  are   done"''"without  loosing  a  life......."
9885 PRINT '"(this is shown by the number  of"''"
bells in the left hand corner)..": GO SUB 9700
9900 PRINT AT 9,0;"CONTROLS ARE:"''"'Z' LEFT"''"'
X' RIGHT"''"'SPACE' JUMP": GO SUB 9700: GO TO 100
```

Lines 9880-9900 Page two of the instructions.

```
9905
9910 REM DATA FOR UDGs
9915
9920 DATA 254,254,254,0,247,247,247,0,1,3,7,15,31
,63,127,255
9930 DATA 28,44,52,56,28,44,52,56,60,126,126,126,
255,255,60,24
9940 DATA 15,63,127,255,252,240,96,48,192,252,252
,248,16,16,8,16
9950 DATA 31,127,255,239,239,239,239,207,224,248,
254,238,238,238,238,236,31,31,62,62,62,124,124,30
9960 DATA 224,240,240,120,120,60,60,62,127,127,12
4,60,60,60,62,63,224,240,240,248,248,248,248,248
9970 DATA 31,31,31,15,15,15,15,7,240,240,240,224,
224,224,224,248,24,24,36,102,66,102,36,36
9980 DATA 36,102,231,165,165,66,126,126,126,126,1
02,102,102,102,231,231,24,24,24,24,24,24,24,24
9990 DATA 24,60,90,153,24,24,24,24,0,0,4,2,255,2,
4,0,0,0,32,64,255,64,32,0
```

Lines 9905-9990 The data for the UDG's.

»INPUT'OUTPUT

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SOFTWARE

■ Will swop *Ghostbusters* for *JSW*, *Valkyrie 17* or *Match Day*, *Arcadia* and *Gnasher* for *Skool Daze* or *Monty Mole*. Tel. 051-525 1395 and ask for Nathan.

■ Swop *The Hobbit* and *Flight Simulation* for *Everyone's A Wally* or *The Quill*. Write to D Brooker, 27 Greenfield Road, Atherton, Manchester M29 9LW.

■ Swop Spectrum software. Send your list for mine to S Palmer, 35 Brynteg, Rhiwbina, Cardiff, CF4 6TT.

■ Swop any two of *JSW*, *Cyclone*, *Pyjamarama*, *Softaid* etc, for *Match Day* or any one for *World Cup*. Tel. Staylybridge 64-64014 and ask for Simon.

■ Swop 10 games for Dk'tronics Light Pen, 15 for Currah MicroSpeech, 25 for Interface 1, or 25 for a Microdrive. For list, write to Hamer, 26 Avenue Aubepines, 4430 Alleur, Belgium.

■ Many top games to swop. Send your list for mine. Also sell ZX printer for £15 with 3 rolls of paper. Write to Richard Cooke, 9 Whage View, Kirkby-over-Blon, Harrogate, N. Yorks.

■ Got *Match Point*, *Zombie Zombie*, *JSW* and more worth £68. Tel. (0473) 822574 and ask for Geoffrey.

■ Will swop *Alien 8* or *Underwurlde* for Level 9 *Snowball* or *Collossal Adventure* or both for *White Lightning* with instructions (must be original) Tel. 051-486 6331 after 4pm and ask for Shaun.

■ Swop 300 of the best programs. Send your list to Arjan Govers, Zoomulietweg 44, Wouwse Plantage, Holland Y725 TG. Or Tel. 01-657 487.

■ I will swop *Dungeon Builder* and *Zip Zap* for *The Quill*, or swop *Zaxxon* for *Raid Over Moscow* or *World Series Baseball*. Tel. 01-804 4281 and ask for Andrew.

■ Will swop *Hulk* and *Spiderman*. Any offers? Tel. Chirbury (0938 72) 643 and ask for Rodney. Adventures only please.

■ Will swop eleven good games and Kempston Interface for £60 or Floyd 40. Tel. (0432) 275564 after 5pm and ask for Kent.

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■ Swop *Psytron* or any two of *TLL*, *Psion Chess*, *Manic Miner*, *Atic Atac*, *Scuba Dive*, for *Doomdark's Revenge*, *Match Point*, etc. Write to Mark Chamberlain, 17 Mayflower Drive, Marford, Wrexham, Clwydd LL12 8LD.

■ Many top games to swop. Send your list for mine with sae to William McCulloch, 18 Chestnut Drive, Girvan, Ayrshire KA26 0DA.

■ Swop *Every One's A Wally* for *Tir Na Nog*. Or swop *Booty* and *Skool Daze* for *Ghostbusters*. Tel. Maidstone 67128 and ask for Paul.

■ Send your software list for mine. Please enclose sae. Write to S Jackson 19 Portland Street, Lancaster, Lancs. LA1 1SZ.

■ Swop *Quill* for *White Lightning*. Also *LOM* for *Doomdark's Revenge*. I also have issues 2 onwards of *YS*. Offers please. David McGibbon, 12 Philip Road, Durrington, Nr Salisbury, Wiltshire SP4 8DT.

■ Swop *Beach Head*, *Ghostbusters*, etc for *Raid Over Moscow*, *Zombie-Zombie*, *Project Future*, *Alien 8*, etc. Tel. (0926) 651722 (after 5pm) and ask for Timothy.

■ Send your software list for mine. Please enclose sae. Write to Tomi Koninen, Eino Salmelaisenkatu, 13 33720, Tampere 72, Finland.

■ Swop *Trashman*, *Chuckie Egg*, *Ant Attack*, *Hunter Killer* for Dk'tronics Light pen. Tel. 031-339 2704 and ask for Robert.

■ I have *White Lightning*, *Machine Lightning* and *Supercode TTT*. Will swop one to one for *Quill*, *Illustrator*. Tel. (0254) 884627 and ask for Tony.

■ For sale Currah Microspeech and seven games. £60 ono. Tel. (0920) 2194 (after 6.30) and ask for Neil.

■ Do you ever use your Spectrum as a computer? If you do, you may be willing to swop software. Write to Marco Barlotti, 4 Rawnsley Drive, Kenilworth, Warwickshire, CV8 2NX.

■ Will swop *Chequered Flag*, *Chess*, *Horace Goes Skiing*, *Scrabble*, *Survival* and *Make A Chip* for *Pole Position* or one of *Underwurlde*, *Knightlore* or *Alien 8*. Tel. 01-891 3056 and ask for Manish.

■ Swop *Pool*, *Zzoom*, *Airliner*, *Scrabble*, *Make A Chip*, etc for *Match Day* or *Pole Position*. Write to Kevin Casson, 11 Parsonage Road, Galahiels, Scotland TD1 3HS.

■ Swop *Spy Hunter*, *Booty*, *Atic Atac*, *Tranz Am* etc. Any four for *White Lightning*. Tel. (043 471) 2176 (after 6pm) and ask for Alex.

■ I have loads of Spectrum software to swop. Will also swop software for unwanted hardware. Send your list for mine. Sae please. Write to N Mokes, 25 Acacia Avenue, Kingshurst, Birmingham B37 6AG.

■ I have over 600 titles. Send your list for mine. Write to Henrik Neilson, Emil Reesensvey 5, 7400 Herning, Denmark.

■ Will swop *Ugh* (*You mean someone bought Tony Samuels' game? Ed*) and *Ant Attack* for *Spy Hunter* and *Fantastic Voyage*. Both for *Starion* or *The Artist*. Tel. (0223) 358142 (after 4.30pm) and ask for Philip.

■ I want *Pitfall II*, *Jasper*, *Moon Cresta*, *DT's Decathlon* for *Pyjamarama*, *Jet Pac* and many others. Tel. (0555) 870329 anytime and ask for Dougi.

■ Have you got *The Boss*? If so, will swop for either *Pyjamarama*, *World Cup*, *Gobble A Ghost* or *Realm Of The Undead*. Tel. (0224) 690334 and ask for Stuart.

■ Swop *Scrabble*, *Computer Studies* for *Pyjamarama* or *Underwurlde*. Tel. (0493) 603965 and ask for Mr. Northcott.

■ Swop *Psytron* for *Alien 8*, *Knightlore*, *Sabre Wulf* or other Ultimate games. Tel. 01-303 8761 (5-7pm) and ask for Simon.

■ Does anyone have *Astronomer* and *Alien 8*. I've got lots of software to swop. Send your list for mine. Write to Antonio Alberto Figueiredo, Rua dos Mastros 39-1: 1200 Lisboa, Portugal.

■ Send your list for mine. Loads of titles including *Bruce Lee*, *Dragontorc* etc. Write to John Russell, 95 Wood-side Avenue, South Benfleet, Essex SS7 4UN.

■ Swop *Matchday*, *Cosmic Raiders*, *Zip-Zap* and hundreds more. Send your list for mine. Write to Mr. D Dodge, 14 Coombe Road, Harold Wood, Romford, Essex RM3 0TX.

■ Software to swop. I have *Ghostbusters*, *Airwolf* and many others. Send your list for mine to Kevin, 11 Browell Road, Counden, Coventry CV6 1AX.

■ I have 30 games and utilities and 9 books for sale at half price. Tel. (09277) 68117 and ask Dave for details.

■ *Decathlon*, *Survival*, *Airwolf* and *Snooker* for *Skool Daze*, *Chuckie Egg* and *Valhalla*. Tel. Leicester 874698 and ask for Peter.

■ Sell for less than half price or swop for peripherals. I have over 20 arcade adventure tapes. Tel. Hinckley, Leics. 30729 and ask for Reg.

■ Swop *Twin Kingdom Valley*, *Blade Alley*, *Full Throttle*, *Jack & Beanstalk* for *Alien 8*, *Match Day* and *Underwurlde*. All four for *Pole Position* or *White Lightning*. Tel. 041-952 9446 and ask for Chris.

■ Over 350 titles to swop. Send lists to Brian O'Connor, 5 Almeida Terrace, Kilainham, Dublin 8, Eire. (Also wanted a printer or Alphacom).

■ Swop *Pettigrew's Diary* plus *Twin Kingdom* for *Colossal Caves*. Tel. (0304) 840319 and ask for J A Lockerby.

■ All the latest games to swop, *Alien 8*, *Knightlore* etc. Send your list for mine to Gerard Brodigan, 45 Meadow Grove, Dundalk, Co. Louth Ireland.

■ Swop *Erik the Viking* and *Hungry Horace* for *YS MegaBasic*. (*No comment! Ed.*). Write to T Brauerman, 23 Aragon Close, Cambridge CB4 2SU.

■ Swop *Trashman*, *Scuba Dive*, *Zaxxon* and *Wheelie* for *Match Day*, *World Cup*, *Beach Head* or *Ghostbusters*. Send sae for list to Michael Storey, 4 Attlee Estate, Tow Law, Co Durham DI13 4LG.

HARDWARE

■ Kempston Joystick Interface, brand new. Sell for £8 or swop for *White Lightning* with instructions. Tel. Parbold 3050 and ask for Ian.

■ Electronic kit — cost £30, sell for £10 (unused). Also Grandstand *Munchman* for £8. *Demon Driver* for £5, remote control Porsche £8. All v.g.c. Tel. Slough 76841 and ask for Simon after 4.30pm.

■ For sale — CBS Colecovision TV game console with Atari add-on module enabling you to use any Atari cartridges, plus ten cartridges — any offer over £50. Joe, 21 Newbarns Road, Barrow in Furness, Cumbria.

■ Acorn Electron with Plus 3 disk system, some software, magazines and books. Immaculate condition, £275 ono. Tel. Padgate (0925) 811548 and ask for Tony.

■ 48K Spectrum, Turbo Interface, Quickshot II Joystick, Software. Most hardware under guarantee — quick sale, £150 ono. Tel. Ashford (Kent) 20079 before 7pm — buyer collects.

■ Spectrum Dk'tronics keyboard — Microdrive Compatible, hardly used — £25. Tel. Farnham 236563 and ask for Steve.

■ Star Fighter joystick, book of 40 machine routines and *Jet Set Willy*, *Moon Cresta*, *3D Star Strike*, *Danger Mouse*, *Finders Keepers*. All for £25, or swop with a £25 for a Prism VTX 5000. Tel. Tilbury 71706.

■ Help! I need a ZX Printer and will pay £10 secondhand. Tel. Lichfield 55021 and ask for Gordon.

■ ZX81, 1K, Complete and working £20. Tel., during office hours, Coventry (0203) 24632 or write to Mr A Quantum, 63 Compass Court, Norfolk Street, Coventry.

■ Kempston Joystick Interface, brand new. Sell for *White Lightning* with instructions. Tel. Parbold 3050 and ask for Ian.

■ Lots of hardware, software and books. Reasonable prices. Tel. (0467) 42429 and ask for Nick.

■ ZX Printer wanted. Will swop for *Knightlore*, *Decathlon*, *Booty*, *Scrabble*, *Chequered Flag*, *Cricket* and *Football Manager*. Tel. 274513 and ask for Gary.

■ Spectrum FDS Fuller Keyboard plus Currah MicroSpeech boxed with instruction plus 10 items of software. First £50 cheque secures. Includes postage. B. McMahon, 36 Lincoln Wat, Corby, Northants NN18 9HL.

■ Spectrum 48K, over £50 worth of games, programmable joystick, MicroSpeech, 35 editions of *Input* magazine, 16 *Home Computer Weekly* and 5 *PCW*. £150 ono. Tel. (0532) 434009 after 6pm and ask for John.

■ 48K Spectrum with Dk'tronics keyboard and some of the lastest games. All for only £130. Tel. 061-225 4294 and ask for Marcus. Buyer must collect.

■ Spectrum 48K, Interface 1, 2 & Microdrives — eight cartridges — ZX Printer, six rolls of paper, £250 original software. Cost £500. Accept £250. Acorn Electron £75. Wanted BBC B DFS disk drive. Tel. 0276 65275 and ask for J Lyons.

■ Wanted: Queen, *The Works* tape. Will swop for any one of the following: *Match Day*, *Starstrike*, *Monty Mole*, *Games Designer*, *Airwolf* or *Scrabble*. Tel. (0326) 290459 and ask for Sean.

■ Six Wafadrive 64K Tapes plus two super Lerm programs. Only £20, or swop for good quality lightpen (preferably datapen). Tel. (0270) 211248.

■ 48K Spectrum, tape recorder, joystick + programmable interface. 130 games, books and mags worth over £90, all for £130, worth over £500, need quick sale. If interested. Tel. (0204) 76215 after 6pm, and ask for Iain Hughes.

■ Currah MicroSpeech for sale, only £16. Good condition with demo tape, but small hole in the inside box. Tel. Bristol 40135 after 6pm, and ask for Sean.

■ 48K Spectrum in Dk'tronics keyboard, Interface 1 and Microdrive, Kempston Interface + joytstick, RAT joystick, lots of games and cassette recorder, all for £380. Tel. Hornchurch (04024) 72296 after 3.45pm. Must sell.

■ Swop *Stack Light Rifle*, *Trashman*, *Daley Thompson's Decathlon*, *Full Throttle* and many more for software or hardware. Contact M Storey, 4 Atlee Estate, Tow Law, County Durham DI13 4LG.

■ Spectrum 48K with Interface 2, Kempston Joystick, over 150 top games, cassette recorder. Will accept £100. Tel. 041-889 1322 and ask for Mark.

■ Teletype with paper tape reader/writer and serial input/output £30 ono. Tel. Ashford (07842) 51911.

■ Offers invited for some or all of the following: ZX Printer, cassette recorder, ZX81, 16K RAMpack, software, 3 electronic kits. All items in good condition. Tel. (0202) 760930 and ask for Dave.

■ RD Digitial Tracer, £25 ono. Tel. (0634) 374847 and ask for C.I. Tasker.

■ Swop 255 Commando comics plus two games for a Currah MicroSpeech, or any other speech unit. Also, Astro Wars for any good software. Tel. Southampton 783675 and ask for Paul, weekends only.

■ Swop MicroSpeech and Comcon I/F for Alphacom 32, or similar (software too!). Also want *YS* 2 and *YS* 3 (for software). Contact Neil Oughton, Lower Rye Farm, Moreton-in-Marsh, Glos. GL56 9AA.

■ 48K Spectrum + Kempston Joystick and Interface + well over 60 top games inc. *Doomsdark's Revenge*, *Starstrike* and *Everyone's A Wally*. Tel. Blackburn (0254) 28685 and ask for Anthony. Offers around £180 please.

■ Intellivision console, 11 games £55. Mark House, 12 Braemar Rise, Salisbury SP1 3QB. Tel. 20690 and ask for Mark.

WANTED

■ *Star Wars* cartridge or cassette will swop games such as *Pole Position*, *Bruce Lee* and 100 other games. Write to 14 Kinloss Park, Cupar Fife, *Bruce Lee* and 100 other games. Write to 14 Kinloss Park, Cupar Fife, Scotland KY15 4EJ.

■ Wanted, Interface 1 and Microdrive. Will swop *Alien 8*, *Moonalert*, *Fred*, *Cookie*, etc and £30, or swop all games for any Spectrum printer. Tel. (0229) 42297 and ask for Peter.

■ Wanted Dk'tronics programmable joystick interface in good condition. Write to Michael Sellar, 24 Campbell Avenue, Edinburgh EH12 6DN.

■ Wanted *Machine Code Tutor* and *Picturesque Assembler*. Swop 2 of *Combat Lynx*, *Pyjamarama*, *Moon Alert*, *Android 2*, *Beaky*, etc. Write to M. Taylor, 31 Auckland Road, Hucknall, Notts. NG15 6RA.

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■ Wanted ZX Printer. Swop for £50 software. Also swop £60 worth of software for Currah MicroSpeech. Tel. Basingstoke 53497 and ask for Geoff.

■ Wanted Programmable joystick interface. Will swop Dk'tronics Lightpen plus *Scope 2*, both with manuals and software. Tel. (0342) 313641 and ask for Steve.

■ Wanted-money for any issues of *YS* 2-15. None mutilated. Tel. Nailsea 854340 and ask for Ian.

■ Interface 1 and Microdrive wanted. Will swop for 13 programs worth £85 and 6 books worth £40. Tel. (0704) 76580 (after 5pm) and ask for Michael.

■ Wanted VTX 5000 Modem and manual. Will swop Currah MicroSpeech, *The Quill*, *Pystron*, *Sherlock* etc. Tel. Mickey (0908) 643456 and ask for Mickey.

■ Wanted urgently, *YS* issues 1 to 7. Best price paid. Offers please. Tel. (0234) 750214 and ask for Derek.

■ Wanted, ZX printer for Spectrum, with all manuals. Please write to R. Love, 15 Springfield Gardens, Whitley, Mecksham, Wilts, SN12 8RQ.

■ I need issues 2 and 3 of *YS*. Will pay £1.50 each if complete. Write to JF Richards, 17 Sylvan Walk, Southcote, Reading, Berks RG3 3HJ.

■ Wanted, ZX printer with paper. Will swop for *Chess*, *Worse Things*, *Mugsy* and more. Write to David Neeson, 25 Ladywell Drive, Tullibody, Clackmannanshire, Scotland FK10 2QP.

■ Wanted *Tasword Two* and Hisoft's *Devpac* or *Picturesque Assembler*. I have Currah MicroSpeech and joystick or software to swop. Tel. 01-853 1179 and ask for Steven.

■ Wanted, issue 6 of *YS*. Will pay £2. Tel Sulgrave, Northants. 403 and ask for William.

■ Microdrive and Interface 1. Will swop for £180 of original software inc. *Alien 8*, *Wriggler*, *Zaxxon*, 27 titles in all. Will also give Currah MicroSpeech or £20. Tel (0652) 33061 and ask for Andrew.

■ Wanted ZX or Alphacom printer with paper. Will swop for MicroSpeech and software. Loads of software to swop. Write to Rick Travis, 6 Bar Lane, Staincross, Barnsley, South Yorkshire, S75 6DQ.

■ Wanted, issue 4 of *YS*. Also any good POKEs. Tel. (0539) 821631 and ask for Richard.

■ Wanted your hardware for my software. Loads of games to go! Any 25 titles for Microdrive, Wafadrive etc. Tel. Soton 735 179 and ask for Tim.

■ Wanted Currah MicroSpeech. Willing to give up to 35 games. Also swop your list for mine. Write to Craig Street, 15 Isis Grove, Chelmley Wood, Birmingham B36.

■ If you have a Microdrive and Interface 1 or a Wafadrive or a Currah MicroSpeech or a printer and interface or a Kempston joystick interface and want to swop it for software and money, I have over 50 titles to choose from. Write to Kjell E Kolstad, PL 2115 44303, Stenkullen, Sweden.

■ Wanted issues 4 and 7 of *YS*, also a ZX Printer. Please tel. Rayleigh 774024 and ask for Frank.

■ Wanted ZX printer good condition. Swop for *Time Gate*, *Atic Atac*, *Everest Ascent*, *Rescue*, *Chamber of Horros*, *Horace and the Spiders*, etc. Write to 46 Wiltshire Gardens, Bransgore, Christ Church, Dorset.

PEN PALS

18 year-old hacker from Yugoslavia seeks pen pal from anywhere. I have lots of the latest games and I write machine code. I like music — Depeche Mode, Eurythmics and I read Sci-Fi books. Rancic Milos, Ziherlova 6, 61000 Ljubljana, Yugoslavia.

■ Reasonably sane, intelligent male or female sought as pen pal by 15 year-old to exchange tips, games, info, etc. Write to Richard Lane, 278 Obelisk Rise, Northampton NN2 8TW.

■ Hi! I would like to have a 13 year-old male/female penpal. Must be a games freak and hopefully into hacking. Write to N. Stephens, 13 Rusholme Road, Putney, London SW15 35X.

■ Irish girl penfriend wanted, 12/13. Into skating, The Young Ones, Films. Please send good photo. Will give advice on games if needed. Gaoin Paisley, 58 Thomas Moore Road, Walkinstown, Dublin 12, Eire.

■ Machine Code user wishes to correspond with machine code user on any aspect of machine code programming. Write to Steven Hayward, 29 Henwood Road, Compton, Wolverhampton, West Midlands WV6 8PQ.

■ Spectrum pen pals wanted to swop games, hints. Every letter guaranteed a reply. Send your list for mine to Paul Ledger, 2 Henconner Garth, Chapel-Allerton, Leeds LS7 3RZ.

■ Hi! I'll be your pen pal if you can tell me who sang "When October Goes" at Wembley last November! You must be a devoted fan of his. Anita Bottrice, 26 Goosecliff Road, Ensbury Park, Bournemouth, Dorset BH10 4HB.

■ Does anybody out there write programs? Swop original games and ideas with Paul Kelly (aged 15). 7, Gladstone Terrace, Whitley Bay, Tyne and Wear, NE26 2EH.

■ I am 13 years old. I am interested in comps + Tarantulas. If you know anything about them then write to Philip Muir, 8 Craiqdhy Ave, Milngavie, Glasgow GC2.

■ Newly formed computer club seeks pen pals for members. Any age or sex. Write to Jim Fanning, Youth Leader, Ducan Bowen Youth Wing, Kingsworth Road, Ashford, Kent. Tel. (Ashford) 29804.

■ Wanted. A female pen pal to swop games. I have 85 games, I am male and I love Speccys. Write to Geoff Spick, 28 Swinderby Drive, Oakwood, Derby DE2 4RN.

■ Anyone wishing to swop software and hints, send an sae to me with a list of your games. Dan Schailbman, 12 Glenavan Drive, Rochdale, Lancs. England.

■ Pen pal wanted. I am called Andrew and I would like somebody to swop hints, tips and games with. Tel. (0282) 695240 and ask for Andrew.

■ Pen pal to swop software hints tips, etc. I have over 400 titles. These include *Bruce Lee*, *Starion*, *Spykunter*, *Baseball*. Send your list for mine to Ivan Bristow, 'Eastside', Brinkworth, Nr Chippenham, Wilts SN15 5EJ.

■ 13 year old male Spectrum owner seeks pen pal of same age. Preferably American, or anywhere abroad. I enjoy most games and I am learning programming. D. Ellson, 37 Buckingham Road, Morecambe, Lancashire, England LA4 4LX.

■ Any 20+ rock fans into bikes, beer and Speccies want to swop insults, music, games, tips and mags then write to Mall Smith, 20 Pinewood Avenue, Flanshaw Park, Wakefield, Yorks WF2 9JR. All letters answered.

■ I am 13 and want a pen pal who wants to swop games. Leeds dwellers only please. Write to Andrew Betteridge, 6 Allerton, Grange Rise, Leed 17.

■ I'm 14 and would like a pen pal of the same age (hopefully a beginner), male or female. Write to Iris Thompson, 3 Valley Road, Park Village, Wolverhampton WV10 0NY.

■ Competition! First female to reply to this ad will win a male pen pal (16) who enjoys different types of music and Speccy games. (*Everyone's a winner, eh? Ed*) Gordon Turner, 22 Hemplands, Chedworth, Cheltenham, Glos. GL54 4NH.

■ Speccy owner seeks male/female Speccy owner to swop hints, ideas, software and tips. Write to David Neeson, 25 Ladywell Drive, Tullibody, Clackmannanshire FK10 2QP.

■ There must be someone, somewhere, who — like me — wants a pen pal to swop games etc. So come on, let's be hearing from you. Jeff McCann, 52 Frampton Close, Bransholme, Hull, HU7 6AJ.

■ Lonely Spectrum owners seeks pen pal, preferably age 12+. Swop hints and tips and games, etc. I like music and programming — male or female. Alan Lowles, Toad Hall, Cassell Bank, Middleton-in-Teesdale, Co. Durham, England DL12 0UZ.

■ Pen pal wanted. I am 14 and interested in programming Basic and fantasy role playing. Write to Richard, 13 Ventnor Street, Weddington, Nuneaton, Warks. CV10 0BS.

■ Pen pal wanted to exchange ideas and programs. Interested in Basic, m/c, board games, etc. Write to Dirk Ghtsens (age 29), V DE Saedeleer Str. 92, B-9300 Aalst. Belgium.

■ 16 year-old female Speccy user (preferably British or American) wanted to swop games, hints and tips. Any takers? Paul Smurthwaite, Wellsforest Cottage, Longhaven, Peterhead, Aberdeenshire, Scotland AB4 7PX.

■ Lonely 17-year-old would like to hear from beautiful, romantic females. A degree in nuclear physics or brain surgery won't help, a photo would! Write to James Shaw, 17 The Logan, Liff, By-Dundee, Tayside DD2 5PJ.

■ Will swop *Code Book Caper*, *Mafia Contract* or *3D Space Wars* for *Airwulf* and *Pole Position II*.

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■ I will swop *Ghostbusters* for *Match Day* or *Alien 8*. Write to Max Davidson, PL5183, 45900, Ljungskile, Sweden.

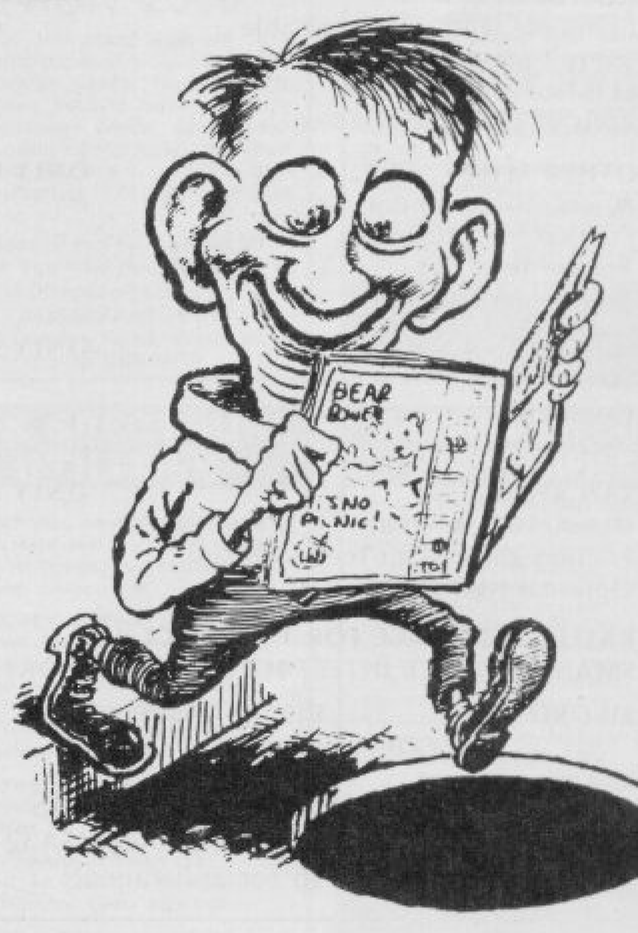
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HACK-FREE ZONE

You know what they say. Those who can, play. Those who can't, hack. Welcome to the page for all of us who can!

So, what have all you gamesplayers been up to since last month — other than poking fun at all the hackers? Well, a lot of you have been finishing games without resorting to cheating. **Stefan Johnson** from Gravesend tells us that he's completed *Cavelon.* It's a bit of a fossil but in case there's anyone who hasn't yet cracked it he offers the following tip for reaching level five — take at least four or five crosses and maximum lives or you won't stand a chance.

Colin Read from St. Helens has finished *Pyjamarama* and offers the following clue for his fellow Wally-followers — crash helmets are very tough for library books and if you get through all the levels in the games room then you'll get an extra life. Mmm, s'pose it must mean something to someone.

And now coming bang up to date, **Paul Allen** from Hull has finished last month's megagame, *Shadowfire.* Considering the trouble that *YS* arcade aces, **Ross Holman** and **Steve Malone** had lasting for more than four minutes without an almighty barney on tactics, that's no mean achievement. Perhaps they can learn something from Paul's very clever suggestion that instead of shifting all the Enigma team around the ship, you should just use Manto equipped with the transporter. That way, when he finds Zoff, he can just drop the transporter, beam himself back to the ship and beam the fighting crew, fit and fully armed, straight into the thick of the battle. Now why didn't we think of that?

More of you have finished *Knightlore* than we'd ever have thought possible — and still the hints'n'tips are coming in. **David Bass** from Bridgwater, for example, suggests that you never go near the wizard when you're a werewolf. He's also worked out that the bouncing balls aim straight for the wolf but avoid Sabreman, so it's best to lay low when you've turned into a wolf. Sound advice that — if only Troubleshootin' Pete would take it!

It certainly seems that *Dragontorc* is an easier game to beat than its predecessor, *Avalon* — or that's the impression we've got from your letters. **Martin Edwards** of Staines has these words of wisdom for troubled torcers. First off, follow the poem closely. In the last sanctuary there's a scroll that tells you where to look for the crowns. But has any of you finished *Avalon*?

Finally, from across the Channel, **David Osrin** of Strasbourg has sent in a grande liste of all the games he has finished. Can't tell what possessed him to include *Jet Set Willy* in his rundown, though. Perhaps word hasn't reached foreign parts yet! Still, David's come up with some good advice for martial arts addicts of *Bruce Lee* — if you keep on kicking the fat guy, he'll eventually die. And on the last screen — the one with the wizard — ignore him and take the lantern. Hope that throws some light on the subject.

That's it for another month, but if any of you have finished a game that you think is pretty impossible let us know. And remember to include all your hints'n'tips so that others can learn from your example — it's the only way to keep them from the hands of the hackers! Now send off to **Nothing's Impossible,** *Your Spectrum,* 14 Rathbone Place, London W1P 1DE. C'mon and play the game.

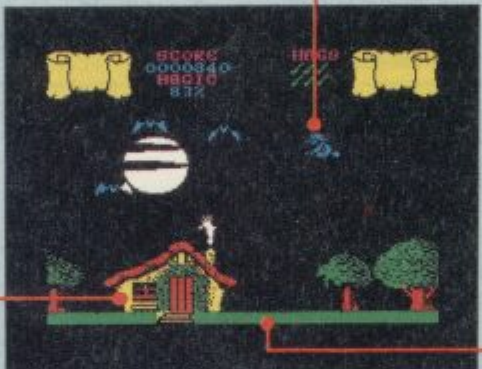
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Here's your witch's den where you're mixing up a rather unusual cocktail in your cauldron. Trouble is six ingredients don't really make everyone's idea of a thirst-quenchin', lip-smackin' drink — d'you fancy imbibing toad, newt, bat, hemlock root, bone and lava from the Smoking Island? *(Mmmm, make mine a double! Ed).*

Tomorrow is the big day of the year for witches — it's Hallowe'en and you've got a lot to do if you're to be chosen as the Witch Queen.



All aboard your broomstick and take to the skies. From up above you have to search out and collect the colour-coded keys that'll let you enter the corresponding doorways.

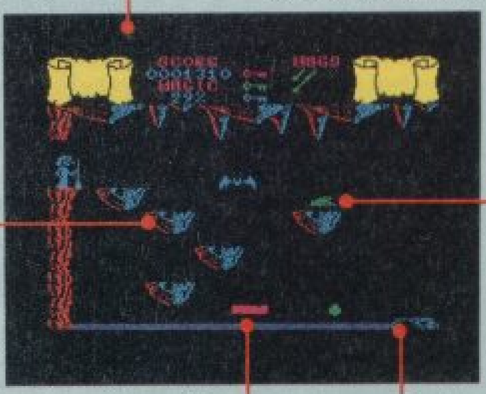
Even though the graphics are excellent, the animation isn't exactly flicker-free and as for the scrolling — ugh! You have to wait for the screen to scroll onto the next one before your witch can enter it.

You're only allowed to land on the grated areas at the bottom. If you miss them the old hag does a mid-air spin and loses another life.

A word of warning — on this level your up/down controls are disabled. Left and right stay the same but the fire button now lets you jump.

Take extra care when jumping onto these platforms. They're not safe! If you go too close to the edge you're liable to get vertigo and go tumbling down.

Collect the object in the underground screens, then make a clean sweep on your broomstick straight back to your hut. Then, brew it up with the rest of the dodgy doin's. Once all six are in the pot, get to the pumpkin hall and go for the giant pumpkin.



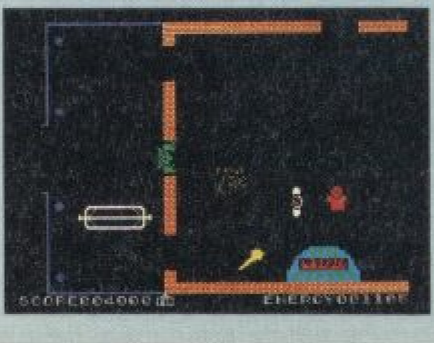
There are moving platforms in most of the underground levels. Judge your jump very carefully and if you don't go in the same direction you'll be tossed away.

Don't tread on the bottom of any of the underground screens — you may never walk again. All your movements must be from platform to platform, so judge your jumps with care.

DEAD GOOD

And now for a surprise bonus. On the reverse side of the *Cauldron* tape, appears the Spectrum version of *The Evil Dead.* It wasn't meant to be there but somehow the gremlins must've crept in at the duplicators. So, dare you risk the evil curse and play the game? Well, you could do worse than give it a go. But the real problem is that there aren't any instructions. A bit of a dead loss, you could say, but panic not, 'cos here at *YS* we've sussed the plot of this computer nasty.

You play the part of Ashly, shacked up on holiday with a group of friends deep in the Tennessee Woodlands. Cheryl, Linda, Scott and Shelly are clean cut all-American kids who just happen to change into ghastly green mutants when they over-indulge with the spirit — Evil spirit, of course. Your aim at the beginning is to keep the evil one out of the shack by rushing round closing all the windows. When that fails as it inevitably does — well, you can't keep a good ghost down — you'll have to try and kill 'em with the weapons scattered round the shack. These will give you differing amounts of energy which you'll lose when you attack an enemy but your points will increase. Only when you've enough points will the Book of the Evil Dead ('a jolly good read' Daily Mirror. 'Dead boring' Your Spectrum) appears — throw it straight on the fire in the main room and you'll have defeated the curse forever. Dead easy, really.



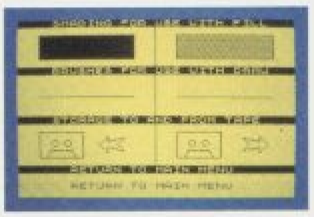
The Evil Dead — a touch of corn with a jolly green giant!



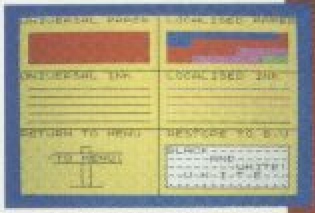
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At last Spectrum owners can choose a TRUE disc drive system for their computer, backed by REAL software support and available with the most comprehensive specification yet developed.

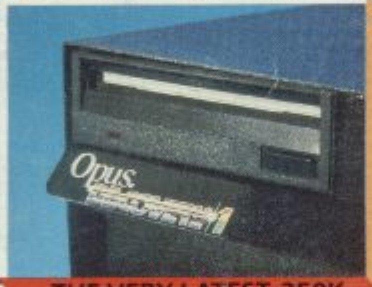
For just £199.95 Discovery offers a new level of performance and a combination of advanced features which make other fast storage systems for the Spectrum and Spectrum + look obsolete.

No wonder one leading computer magazine, Sinclair User, recommended Discovery in its latest guide to fast storage systems for the Spectrum.

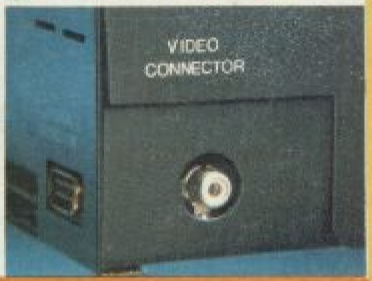
Discovery has been designed to take no USER RAM from the Spectrum during the use of tape-based programs, it accepts the same commands as 'Interface !' allowing you to use many of the cassette programs designed for microdrive and we've even provided you with the firmware to use a super fast RAM DISC when you choose. Random Access Files are fully supported and formatting and back-up routines are included in ROM.

Add to all this a range of great software titles on the latest 3½" disc cartridges commissioned by Boots and you begin to see why we named it Discovery.

Discovery is available from larger branches of Boots and selected computer stores nationwide. For further details call us on 0737 65080 or post the coupon now.



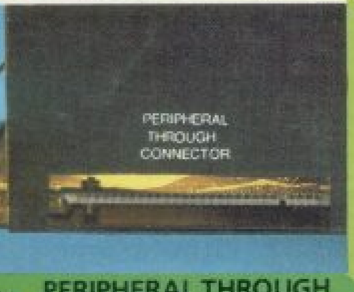
THE VERY LATEST 250K JAPANESE 3½" DISC DRIVE



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☐ Discovery 2 unit(s) at £329.95 each

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